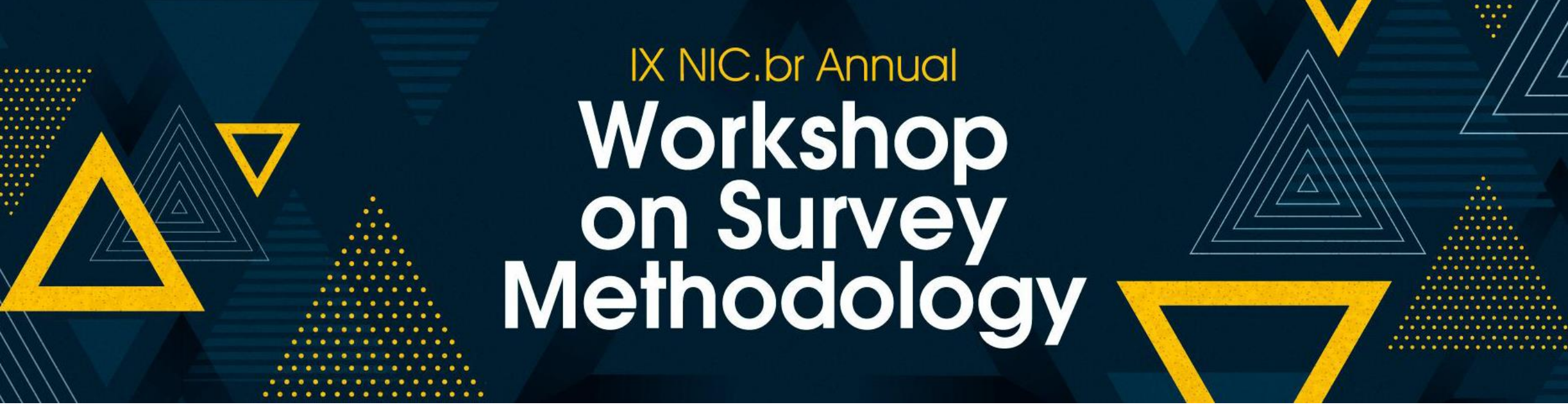
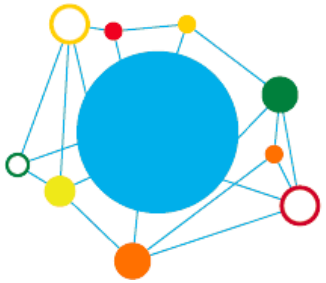


Data for public statistics:
Data Science, Big Data & Artificial Intelligence
20-**21**-22-23 May 2019
Brazilian Network Information Center – NIC.br
São Paulo, Brazil



DATA-POP ALLIANCE

OPAL
open algorithms for better decisions

Make Measurement Matter: Big Data and Artificial Intelligence for Monitoring and Promoting Sustainable Human Development

Emmanuel Letouzé, PhD

Director, Data-Pop Alliance | Director, OPAL Project

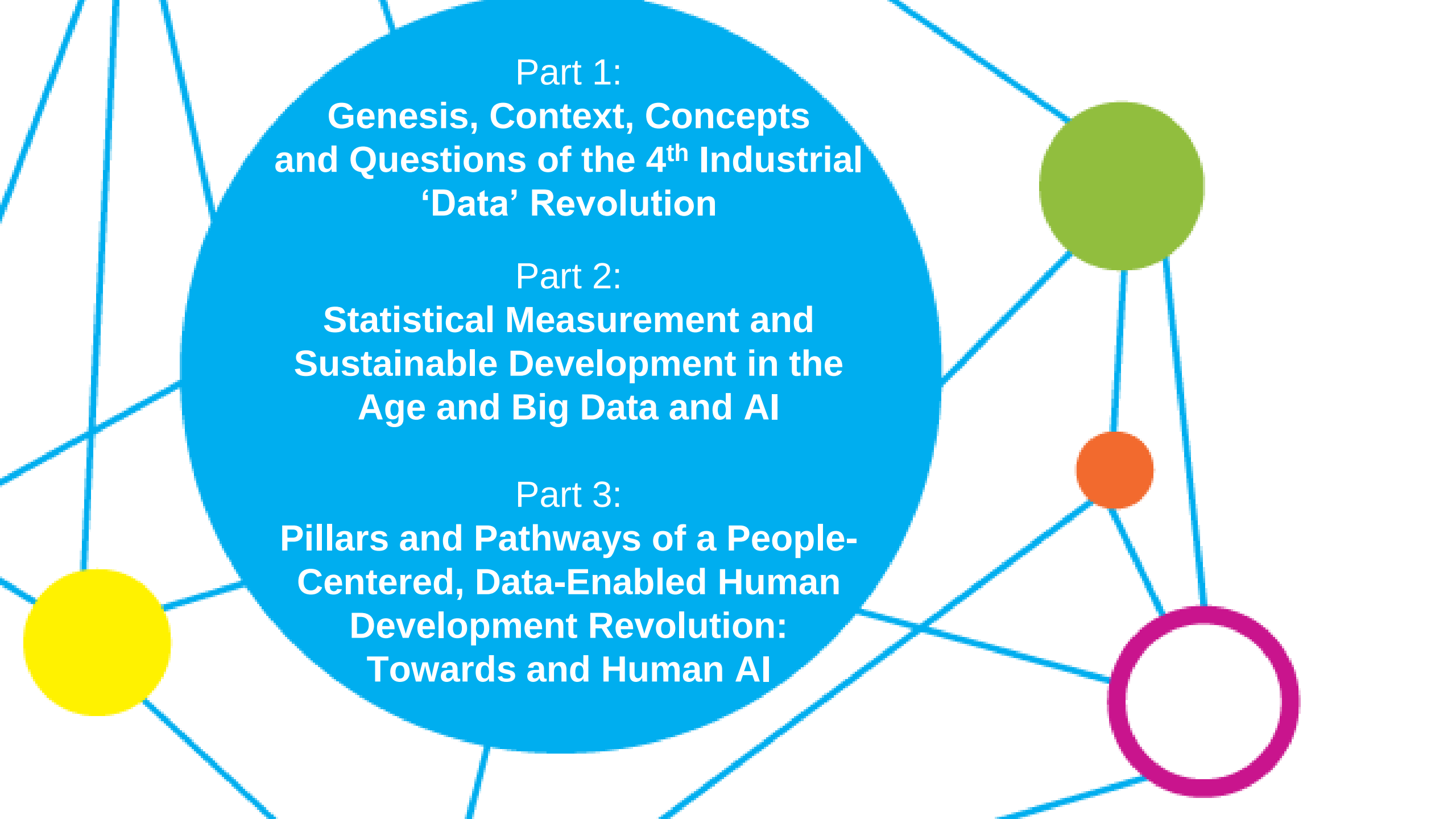
Visiting Scholar, MIT Media Lab | Connection Science Fellow, MIT

mit media lab

Eurostat New Techniques and Technologies for Statistics Conference

Brussels, March 14, 2019

MIT Connection Science


Part 1:
Genesis, Context, Concepts and Questions of the 4th Industrial 'Data' Revolution
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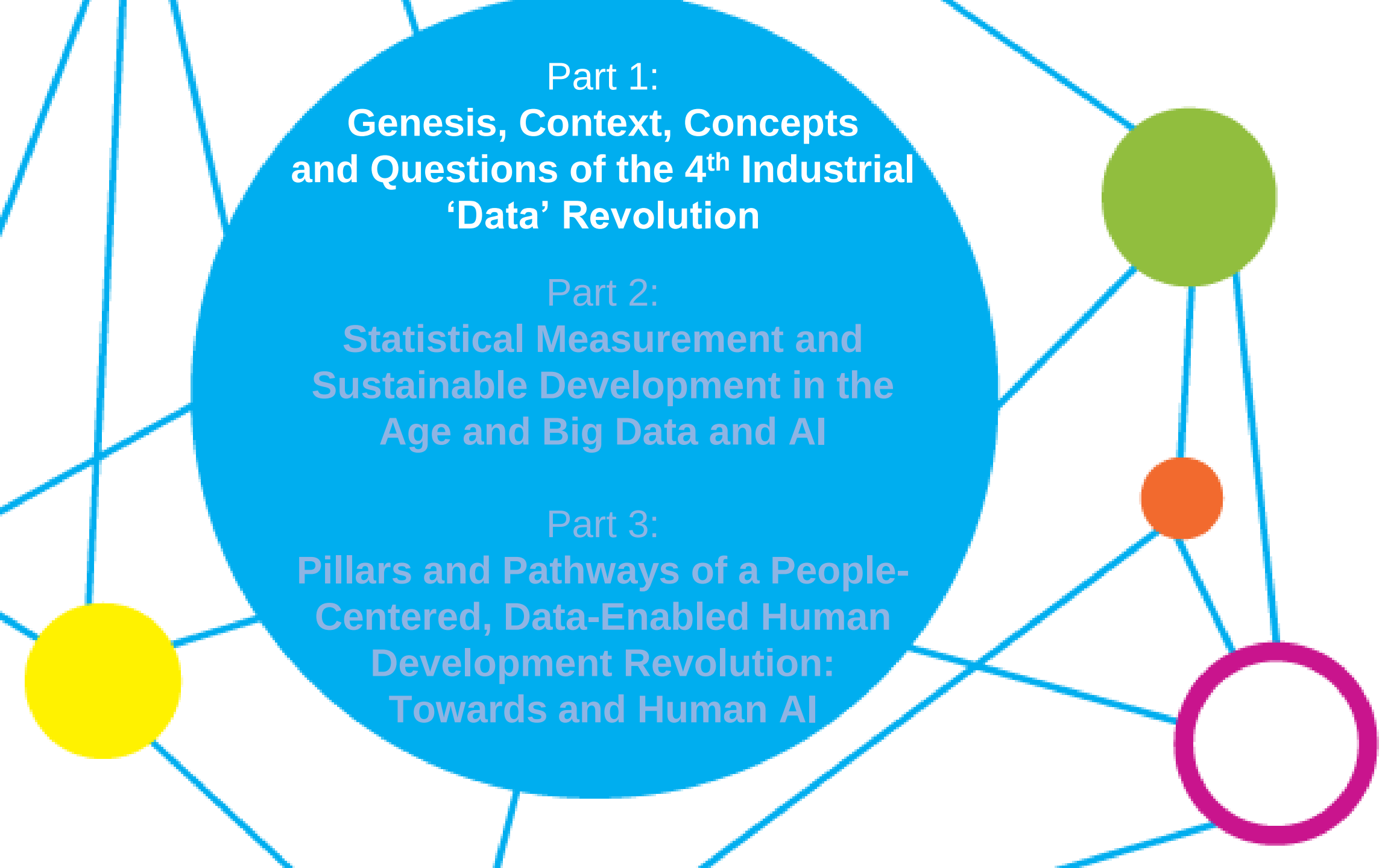
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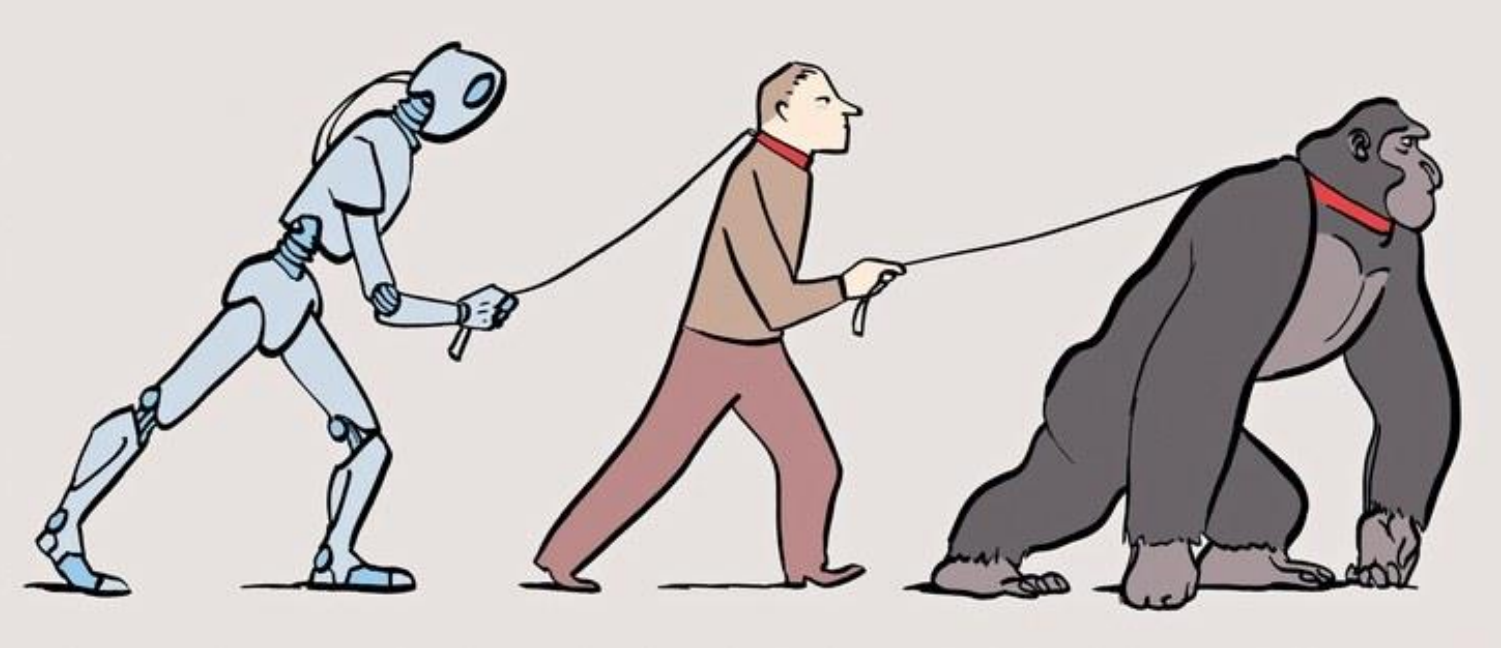
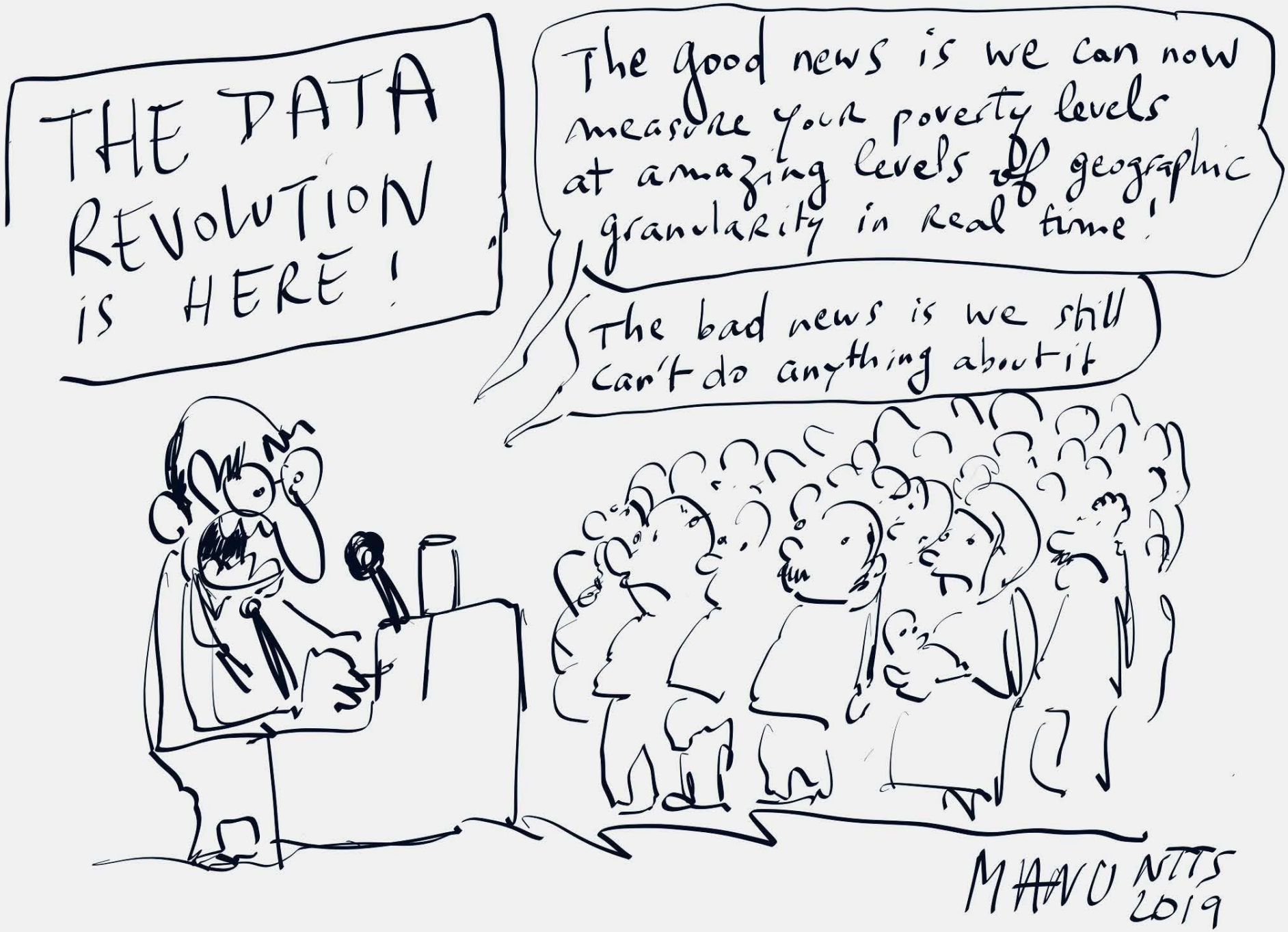


1. Are we ever going to be enslaved by AI-powered machines? Be discriminated by algorithms? Lose our jobs? Have a machine-driven war? Or all get paid to do no work? Hopefully and probably none of the above. But…
2. Can we envision and build a better world where humans and machines cooperate – and where measurements and facts matter for sustainable human development? a ”Human AI” or “human-machine ecology”? What would it feel like, look like, and take? Where are we now and can we go?


THE DATA REVOLUTION IS HERE!
The good news is we can now measure your poverty levels at amazing levels of geographic granularity in Real time!
The bad news is we still can't do anything about it
MANU NTTS 2019

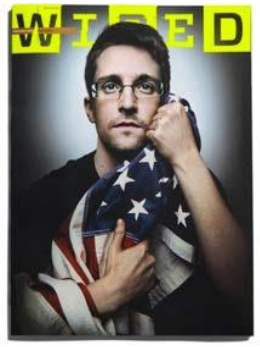
HAL VARIAN PREDICTED:
"THE SEXIEST JOB OF THE 21ST CENTURY WILL BE STATISTICIAN!"


SIRE! WE THINK YOU NEED BETTER DATA!
i THINK i NEED BETTER DATES„
MANU NITS 2019

A decade of “Data Revolution”; a decade until 2030:
expectations, experimentations, controversies, slow changes…

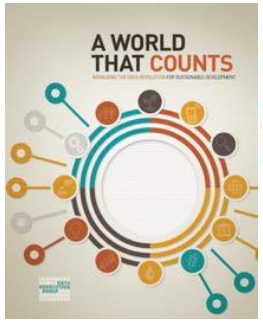
2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 ?

*“We are at the beginning of what I call The **Industrial Revolution of Data.**”*
Joe Hellerstein , Nov. 2008



Fix Africa’s Statistics

By Marcelo Giugale



AFRIQUE CONTEMPORAINE

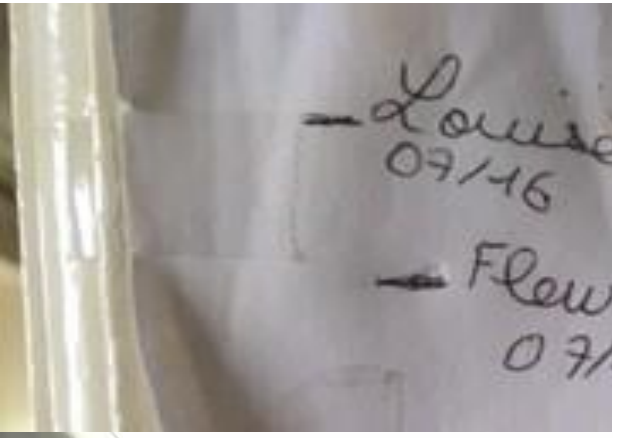
La révolution des données est-elle en marche ?
Implications pour la statistique publique et la démocratie
Thomas Roca et Emmanuel Letouzé

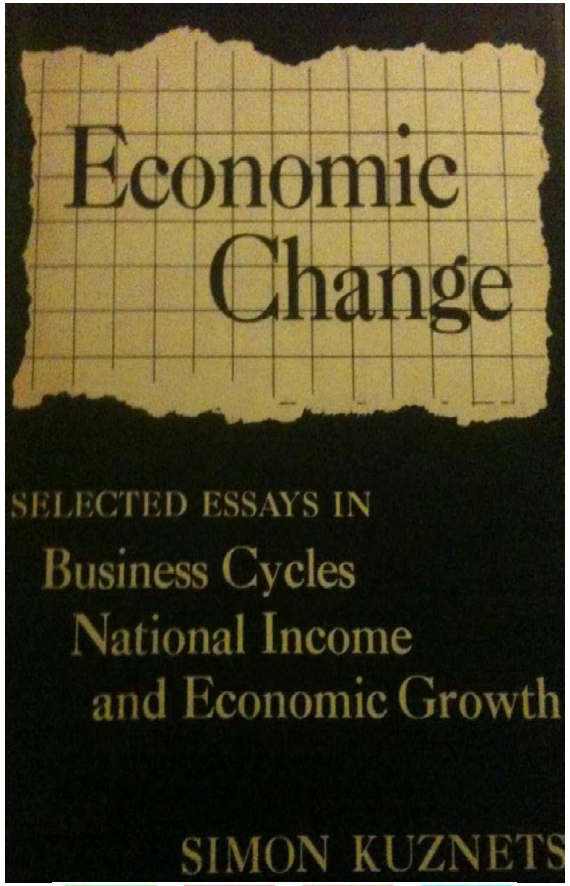
Data and development
Off the map
The Economist

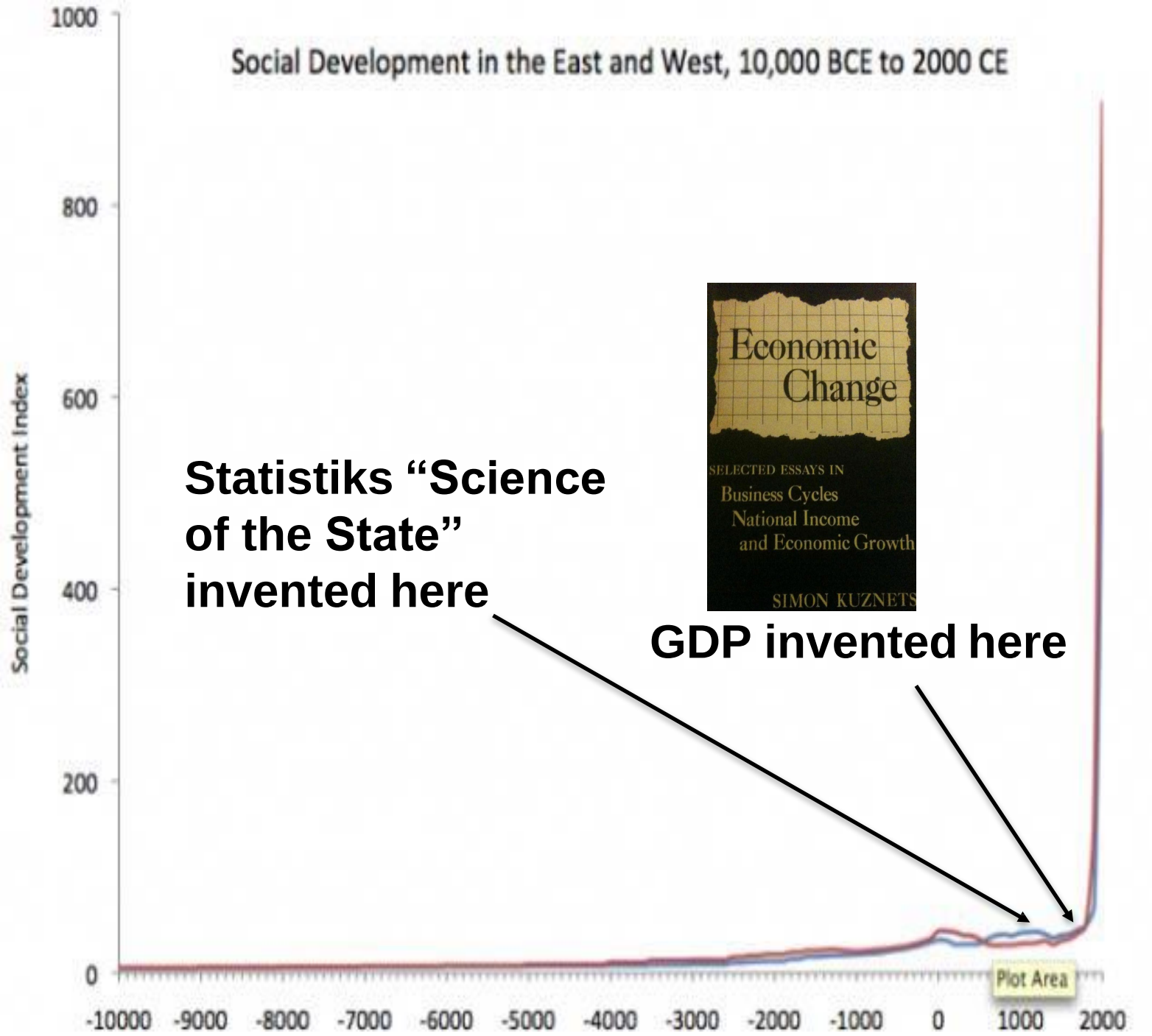
Rich countries are deluged with data; developing ones are suffering from drought

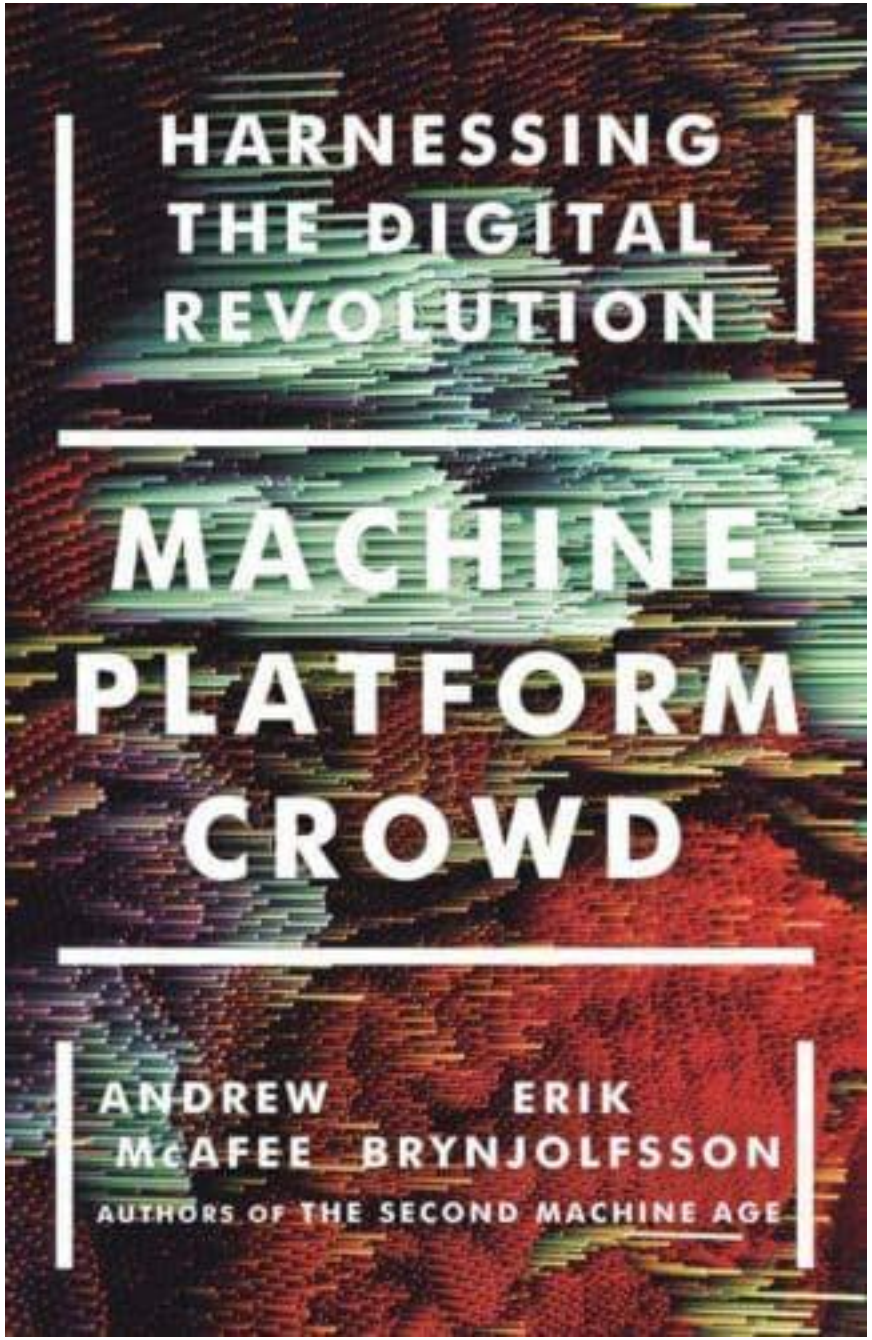
PRINCIPLES *for* Digital Development

Why do we measure things? Does it *matter?* Why or why not? How can it matter more?






Social Development in the East and West, 10,000 BCE to 2000 CE
Social Development Index
1000
800
600
400
200
0
-10000
-9000
-8000
-7000
-6000
-5000
-4000
-3000
-2000
-1000
0
1000
2000
Plot Area
Statistiks "Science of the State" invented here
Economic Change
SELECTED ESSAYS IN
Business Cycles
National Income
and Economic Growth
SIMON KUZNETS
GDP invented here


HARNESSING THE DIGITAL REVOLUTION
MACHINE PLATFORM CROWD
ANDREW McAFEE
ERIK BRYNJOLFSSON
AUTHORS OF THE SECOND MACHINE AGE

What about the SDGs?

The (Big) Data Revolution, democracy, development and the Sustainable Development Goals

1. **How can (Big) Data help *monitor* the SDGs** by "filling data gaps" with more granular & disaggregated data—*and what does measuring and monitoring something do to that something?*
2. **How can (Big) Data help *promote (or impede?)* the SDGS** and their underlying human development vision and objectives—*including towards and through lower (or higher?) inequalities?*

Big Data and AI's relevance for SDG monitoring (from 2015)

DATA-POP ALLIANCE
WORKING NOTE

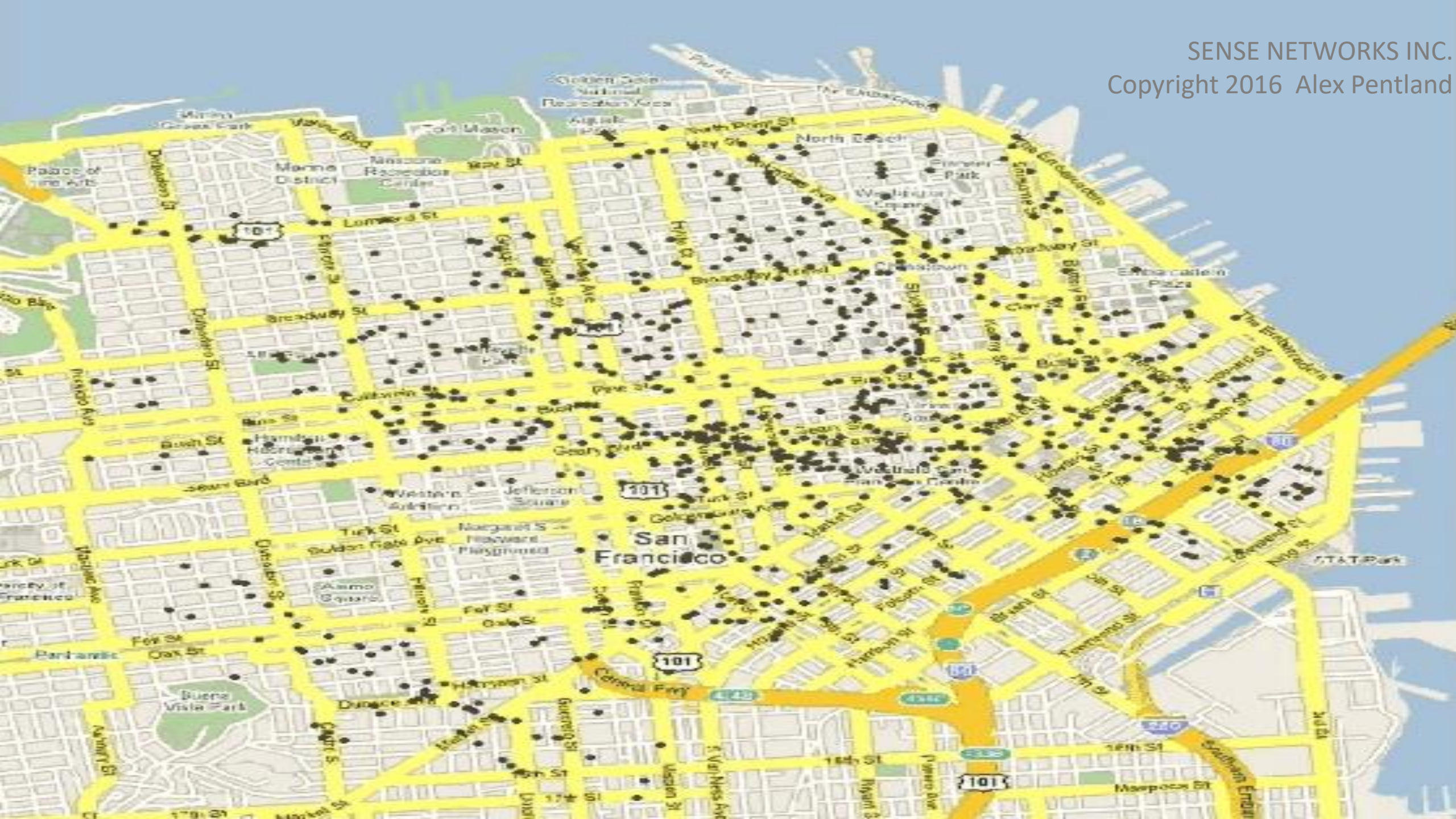
Reflections on Big Data & the Sustainable Development Goals:
Measuring & Achieving Development Progress in the Big Data Era

INPUT TO THE BIG DATA AND SDGS CHAPTER OF THE 2015 GLOBAL SUSTAINABLE DEVELOPMENT REPORT

February 2015

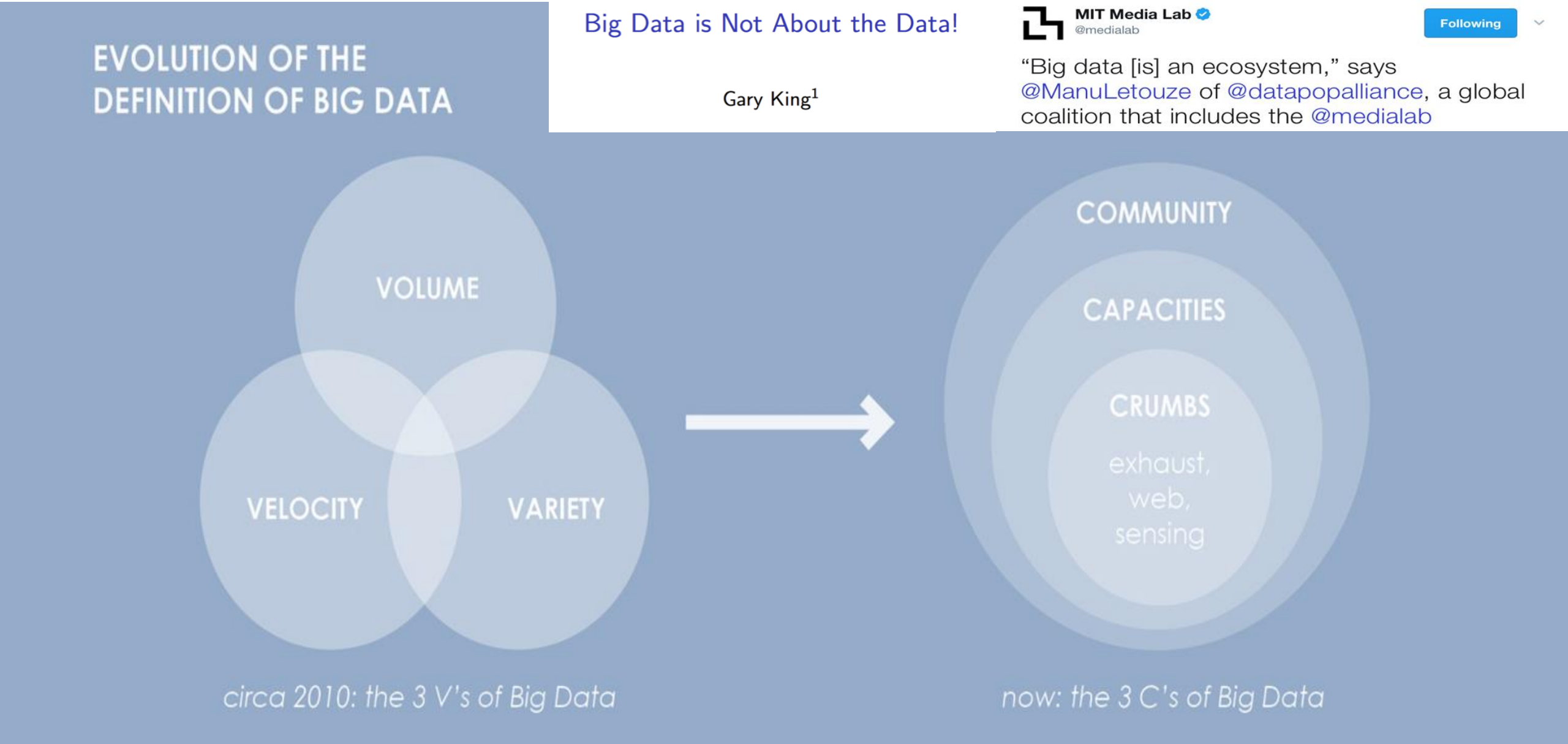
Annex: Uses of Big Data for SDG monitoring

SDGs adopted by the OWG	Big data examples	What is monitored	How is monitored	Country(ies)	Year	Advantages of using big data
1. Poverty eradication	Satellite data to estimate poverty[viii]	Poverty	Satellite images, night-lights	Global map	2009	International comparable data, which can be updated more frequently
	Estimating poverty maps with cell-phone records[ix]	Poverty	Cell phone records	Cote d'Ivoire	2013-4	
	Internet-based data to estimate consumer price index and poverty rates[x]	Price indexes	Online prices at retailers websites	Argentina	2013	Cheaper data available at higher frequencies
	Cell-phone records to predict socio-economic levels[xi]	Socio-economic levels	Cell phone records	"Major city in Latin America" (Actually Mexico-City)	2011	Data available more regularly and cheaper than official data; informal economy better reflected
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	Mining Indonesian Tweets to understand food price crises[xii]	Food price crises	Tweets	Indonesia	2014	
	Uses indicators derived from mobile phone data as a proxy for food security indicators[xiii]	Food security	Cell phone data and airtime credit purchases	A country in Central Africa	2014	
	Use of remote-sensing data for drought assessment and monitoring	Drought	Remote sensing	Afghanistan, India, Pakistan[xiv]	2004	
				China[xv]	2008	
3. Health	Internet-based data to identify influenza breakouts[xvi]	Influenza	Google search queries	US	2009	Real-time data; captures disease cases not officially recorded; data available earlier than official data
	Data from online searches to monitor influenza epidemics[xvii]	Influenza	Online searches data	China	2013	
	Detecting influenza epidemics using twitter[xviii]	Influenza	Twitter	Japan	2011	
	Monitoring influenza outbreaks using twitter[xix]	Influenza	Twitter	US	2013	
	Systems to monitor the activity of influenza-like-illness with the aid of volunteers via the internet[xx,xxi]	Influenza	Voluntary reporting through the internet	Belgium, Italy, Netherlands, Portugal, United Kingdom, United States	ongoing	
	Cell-phone data to model malaria spread[xxii]	Malaria	Cell-phone data	Kenya	2012	


SENSE NETWORKS INC.
Copyright 2016 Alex Pentland
San Francisco


SANDY PENTLAND
"...Big Data comes from things like location data off of your cell phone or credit card,
...the little data breadcrumbs that you leave behind you as you move around in the world...
REINVENTING SOCIETY IN THE WAKE OF BIG DATA 8.30.12

Concepts: from big data to Big Data



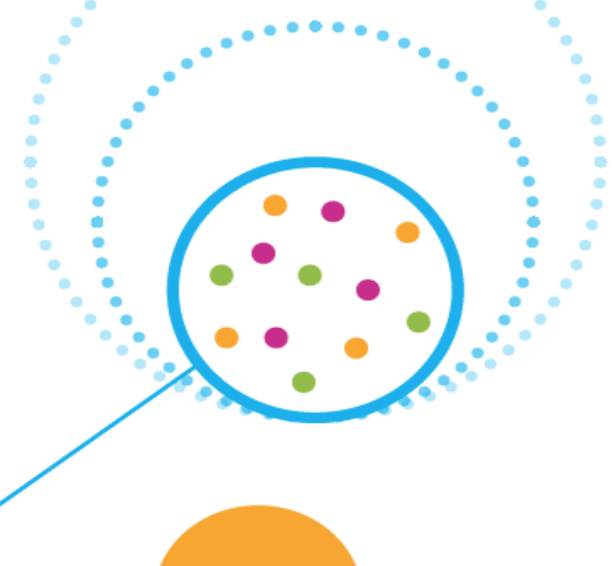
Big Data is Not About the Data!

Gary King[1]

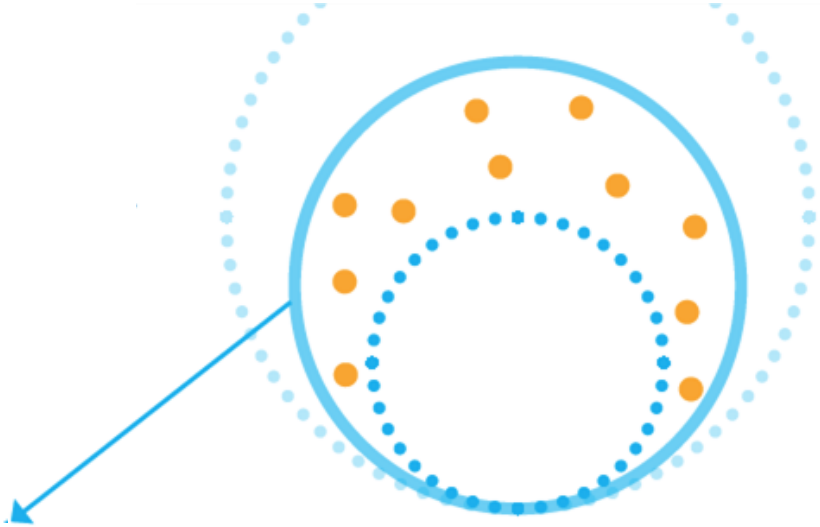
MIT Media Lab
@medialab
Following

"Big data [is] an ecosystem," says @ManuLetouze of @datapopalliance, a global coalition that includes the @medialab

The **C of crumbs**—i.e. those "digital bread crumbs" or those "digital translations of human actions and interactions passively emitted and captured by digital devices". At the center of our information societies is the production of massive amounts of data through connected platforms, social networks, and machines. This feature is important as it presides over a fundamental qualitative shift as much as a quantitative one and gives Big Data its deeply political nature.



The **C of capacities**—i.e. tools and methods to collect, aggregate and analyze data. Algorithms—to be defined and discussed below—fall squarely under capacities, and stand firmly at the center of this ecosystem, as both products and drivers of its expansion. Parallel computing is another key aspect without which Big Data would not exist as a techno-social phenomenon as it allows making computations in a fraction of the time—sometimes years—it would take to run them on one machine.



NETWORK ANALYSIS AND SOCIAL PHYSICS

MACHINE LEARNING TECHNIQUES AND ARTIFICIAL INTELLIGENCE

TEXT MINING TOOLS (SENTIMENT ANALYSIS, TOPIC MODELS, ETC)

SPATIAL ANALYSIS AND GEOGRAPHIC INFORMATION SYSTEMS (GIS)

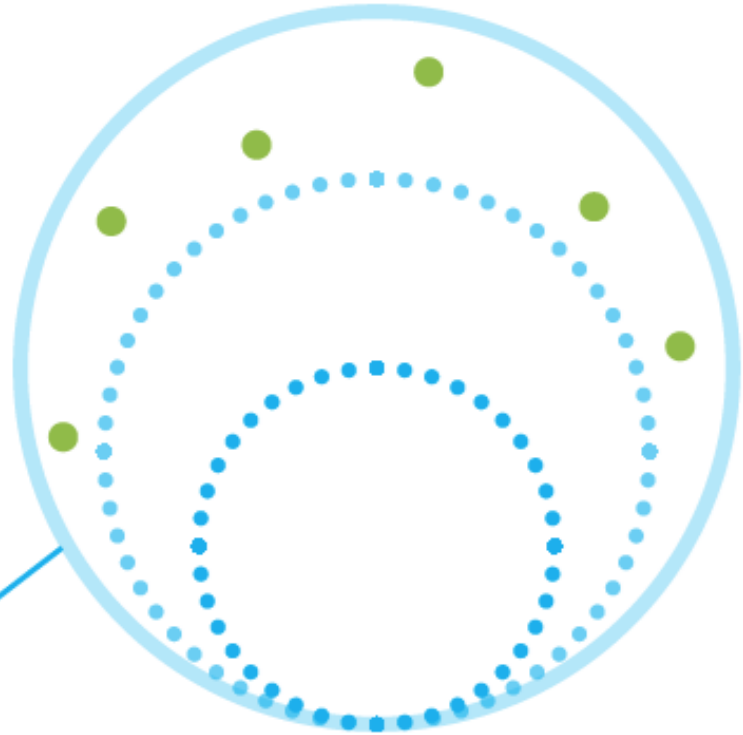
CROWDSOURCING

DATASET DISAGGREGATION AND UNIFICATION

DISTRIBUTED NETWORKS OF DEVICES

CLOUD COMPUTING AND STORAGE

The **C of communities**—i.e. all those involved in generating, governing and using data, including data producers, end users, policymakers, experts, privacy advocates and civic hacker communities. Namely, groups. To date the two constituencies that have been the most active in levering algorithms to make decisions of not as the centerpiece of their business are large private companies and government agencies— notably those in charge of surveillance activities—with academia coming third and organized advocacy groups and networks (e.g. in the humanitarian space) coming fourth.



ACADEMIA AND RESEARCH

CIVIL SOCIETY/ NGOs

MULTILATERAL INSTITUTIONS

GOVERNMENT/ NATIONAL STATISTICAL OFFICES (NSOs)

PRIVATE SECTOR (e.g. TELECOM, FINANCIAL, etc)

Concepts: from big data to Big Data

1. **Big data (as *data*):**
“Digital translations of human actions, interactions and transactions picked up by digital devices and services.”

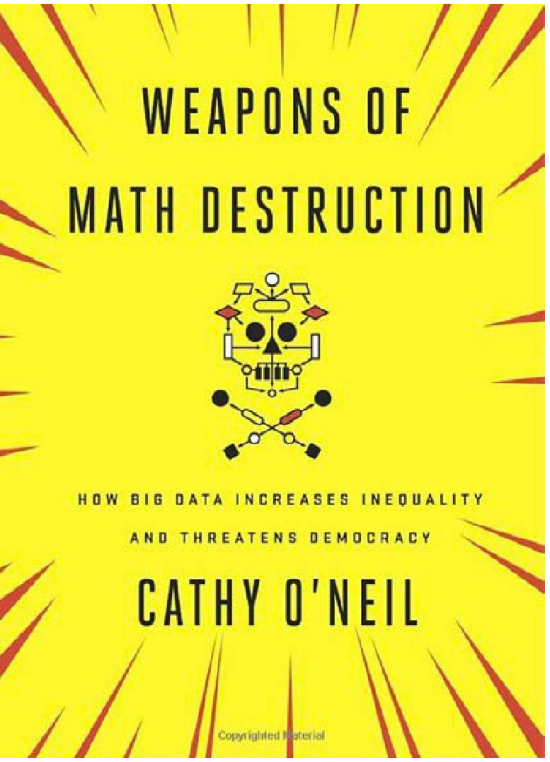
2. **Big Data (as a *field of research and practice*):**
an ecosystem of the 3 Cs of Big Data as data ‘crumbs’, capacities (human and technical), and communities] producing and leveraging information to shape decisions.

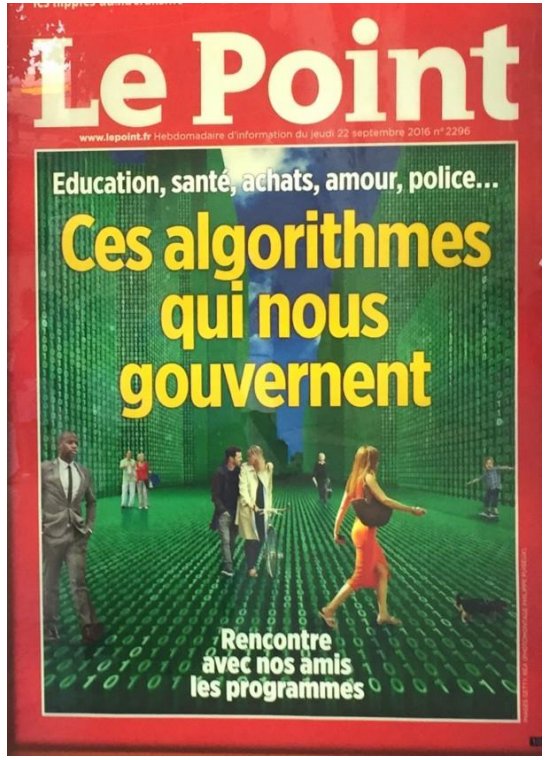
Functions of Big Data

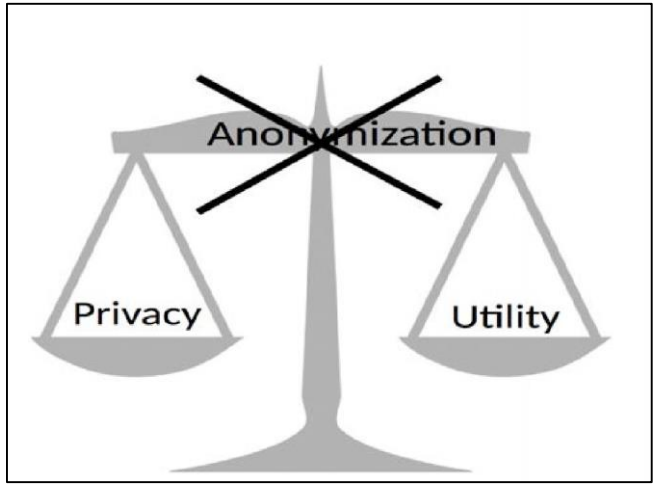
1. **Descriptive**
2. **Predictive**
   - *i. Forecasting*
   - *ii. Nowcasting*
3. **Prescriptive**
4. **Discursive**

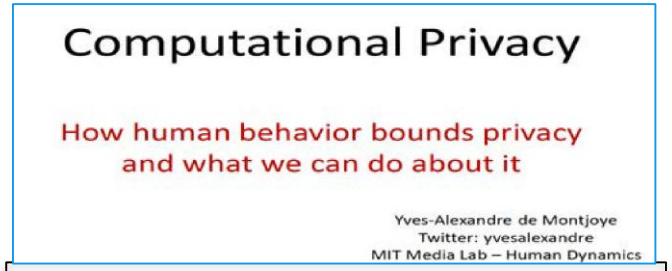
Is this all really bad?

Data centers CO_2 emissions > entire airline industry







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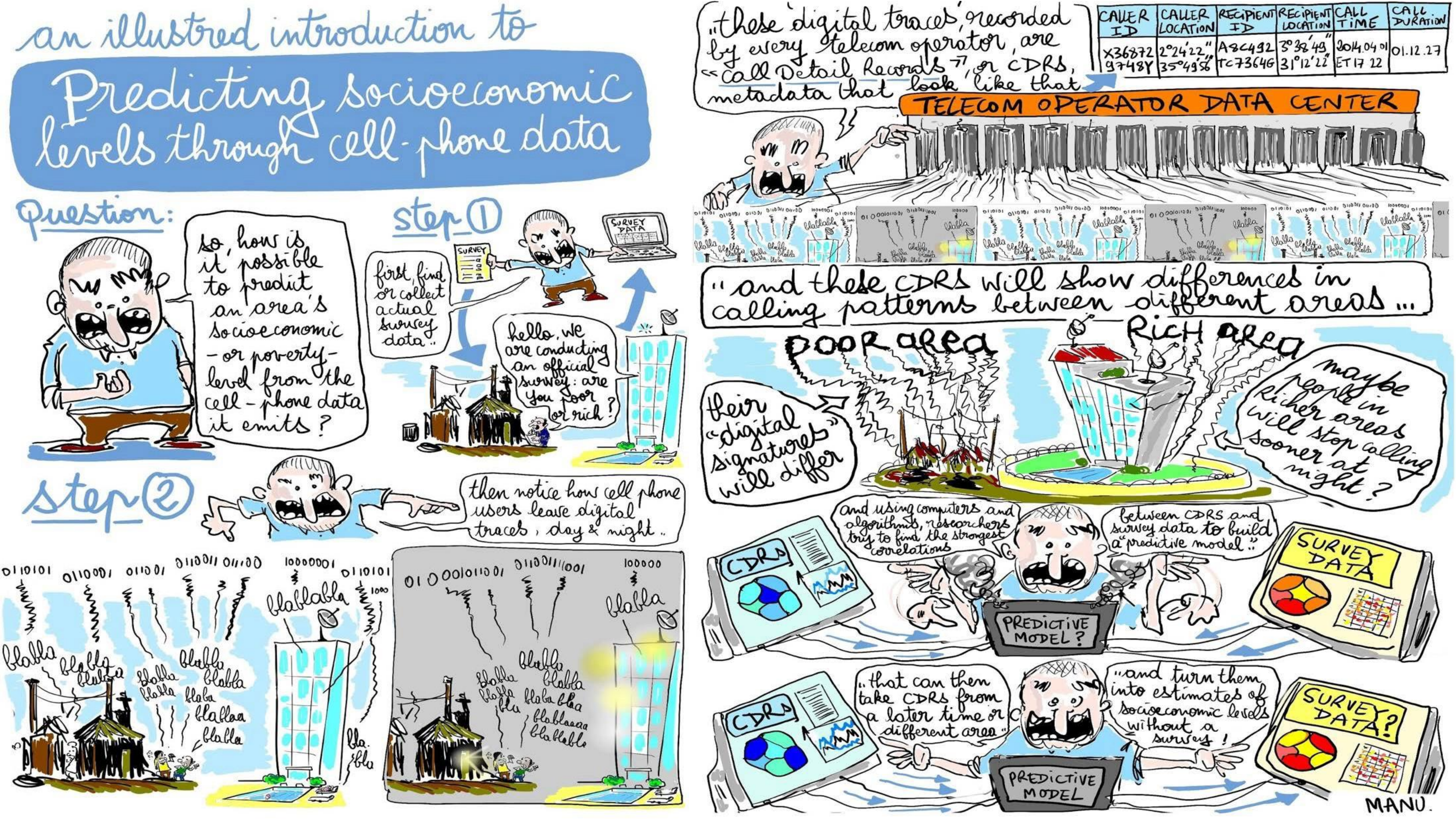
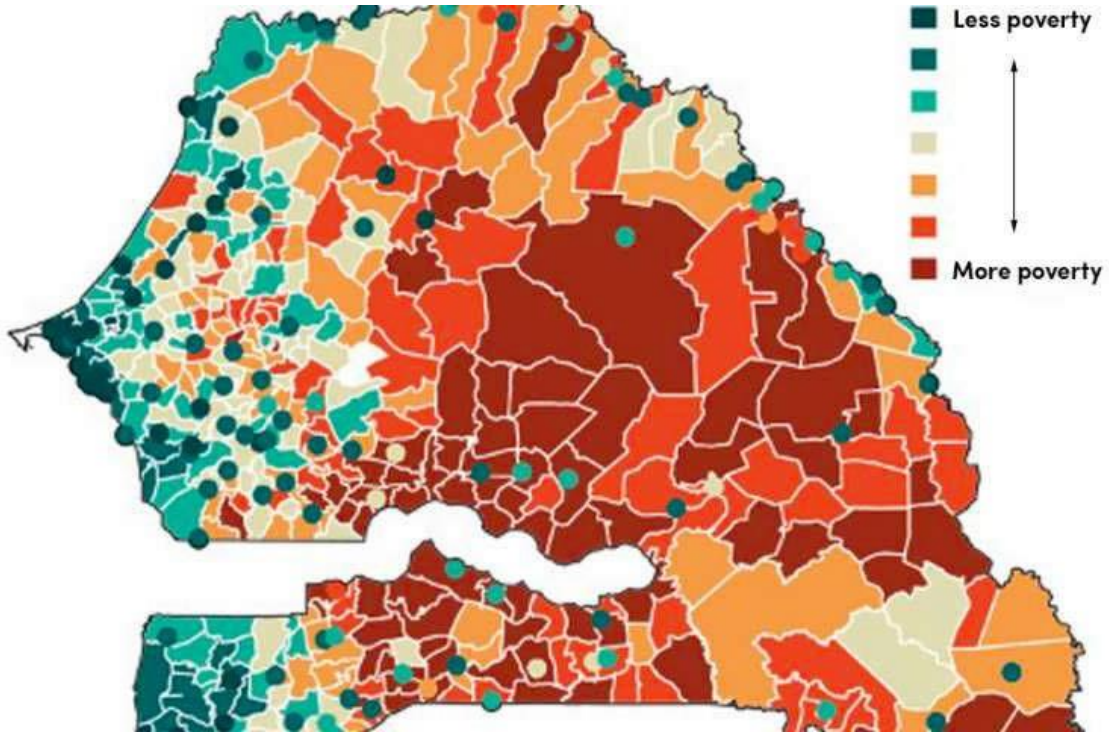

an illustred introduction to
Predicting socioeconomic levels through cell-phone data
Question:
so, how is it possible to predict an area's socioeconomic - or poverty - level from the cell-phone data it emits ?
step 1
first, find or collect actual survey data..
SURVEY
SURVEY DATA
hello, we are conducting an official survey: are you poor or rich ?
step 2
then notice how cell phone users leave digital traces, day & night..
blablabla
blabla
"these 'digital traces', recorded by every telecom operator, are «Call Detail Records», or CDRS, metadata that look like that
CALLER ID | CALLER LOCATION | RECIPIENT ID | RECIPIENT LOCATION | CALL TIME | CALL DURATION
X36872 97484 | 2°24'22" 35°49'56" | A8C492 TC73646 | 3°38'49" 31°12'22" | 2014.04.01 ET 17 22 | 01.12.27
TELECOM OPERATOR DATA CENTER
"and these CDRS will show differences in calling patterns between different areas...
POOR AREA
RICH AREA
their "digital signatures" will differ
maybe people in richer areas will stop calling sooner at night?
and using computers and algorithms, researchers try to find the strongest correlations
between CDRS and survey data to build a "predictive model"
CDRS
SURVEY DATA
PREDICTIVE MODEL?
..that can then take CDRS from a later time or different area"
"and turn them into estimates of socioeconomic levels without a survey !
PREDICTIVE MODEL
SURVEY DATA?
MANU.

Scientific Prize and Ethics Mention: Construction of socio-demographic indicators with digital breadcrumbs

F. Bruckschen [1], T. Schmid [2], T. Zbiranski [1]

We show that socio-demographic indicators such as population, age, literacy, poverty, religion, ethnicity, electricity supply and others can be estimated in unprecedented detail and virtually ad-hoc using antenna-to antenna traffic data only. We offer a uniform approach that can be easily extended to other variables. Results are tested for spatio-temporal robustness and visualized as heat maps.

(1) Humboldt Universität Berlin, Germany - (2) Freie Universität Berlin, Germany



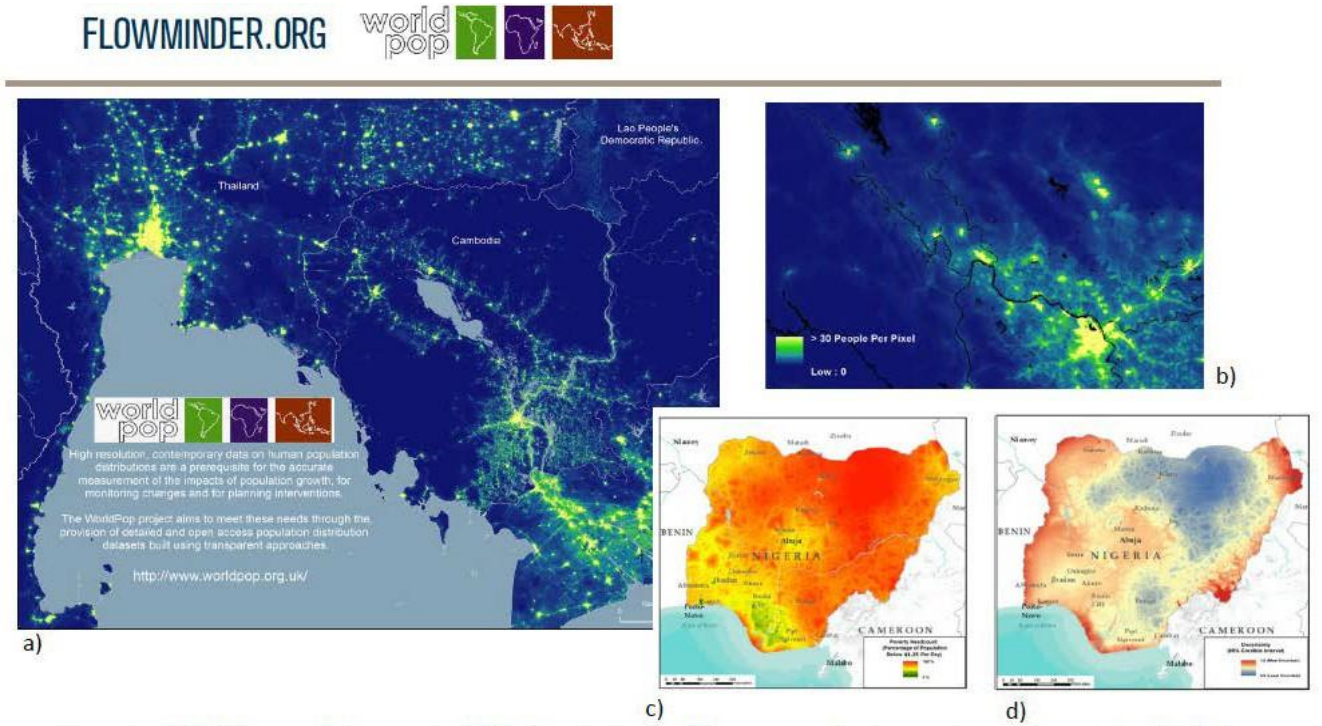
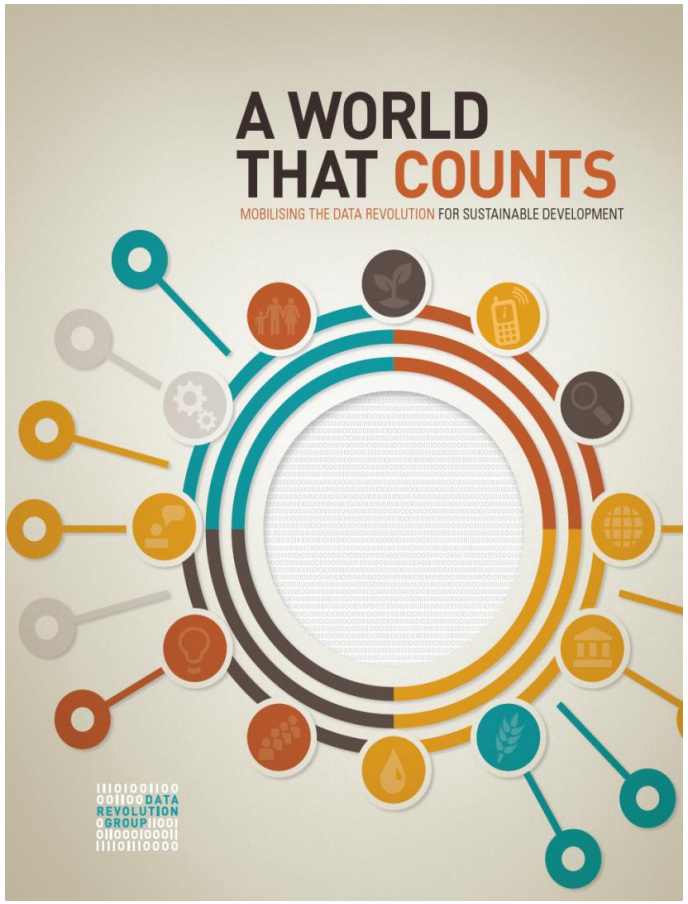


Figure 1: a) WorldPop population density distributions for the the Mekong region; b) close-up picture of population distributions (100x100m) for the Hanoi region; c) Poverty headcounts for Nigeria (<1.25 USD/day) per 1 km²; d) Uncertainty in poverty headcount estimates per 1 km² area.

Since 2013-14 : The ‘Data Revolution’ and/at the UN



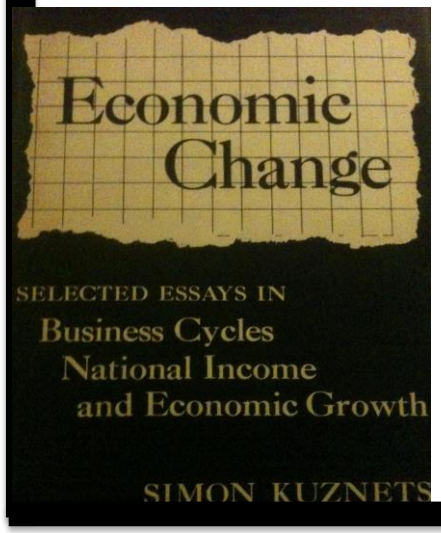
2013: Call for a ***“data revolution for sustainable development (…)*** *to improve the quality of statistics and information available to people and governments*”…

“Data are the lifeblood of decision-making and the raw material for accountability*.*

*Governments, companies, researchers and citizen groups are in a ferment of experimentation, innovation and adaptation to the new world of data****, a world in which data are bigger, faster and more detailed than ever before. This is the data revolution****.”*

Measurement ⟷ Development?

Level of Development



HUMAN DEVELOPMENT INDEX (HDI) RANKS 2014

Top 5 Countries

1. Norway
2. Australia
3. Switzerland
4. Netherlands
5. United States

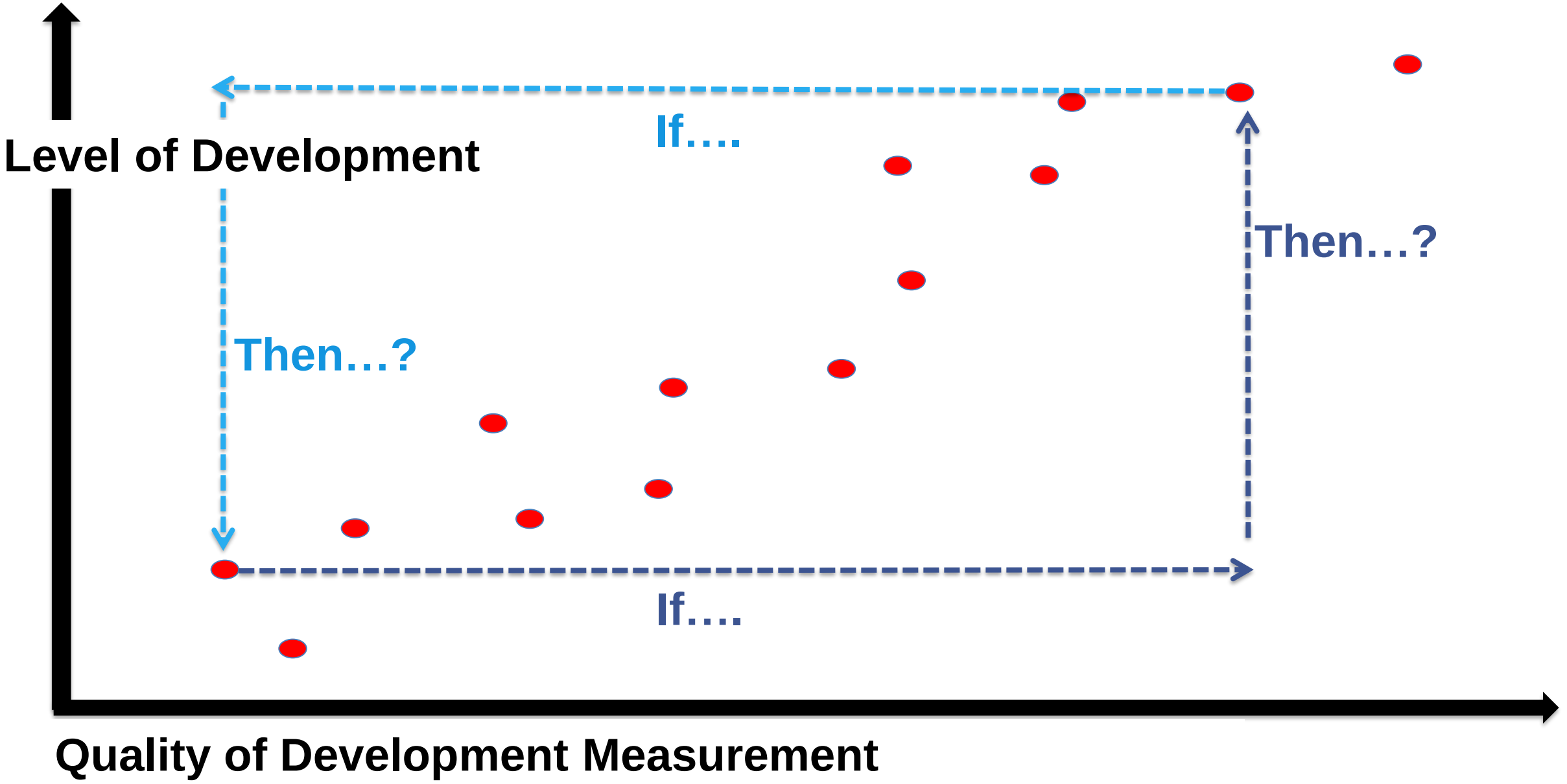
135 India

Bottom 5 Countries

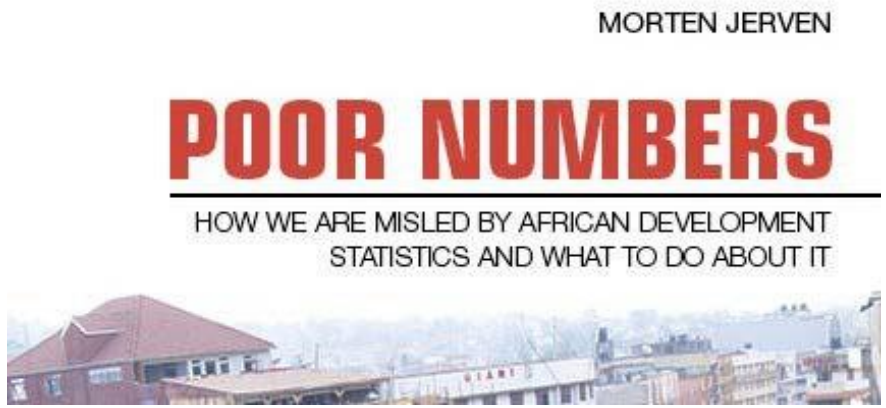
1. Sierra Leone
2. Chad
3. Central African Republic
4. DR Congo
5. Niger

Quality of Development Measurement

Better Data → Better Decisions → Better Development?



Better Data ➔ Better Decisions ➔ Better Development?



"Despite the many publications I think there are still many holes in our knowledge. There is a further need for empirical research on the lines of 'political ethnography of indicators'.

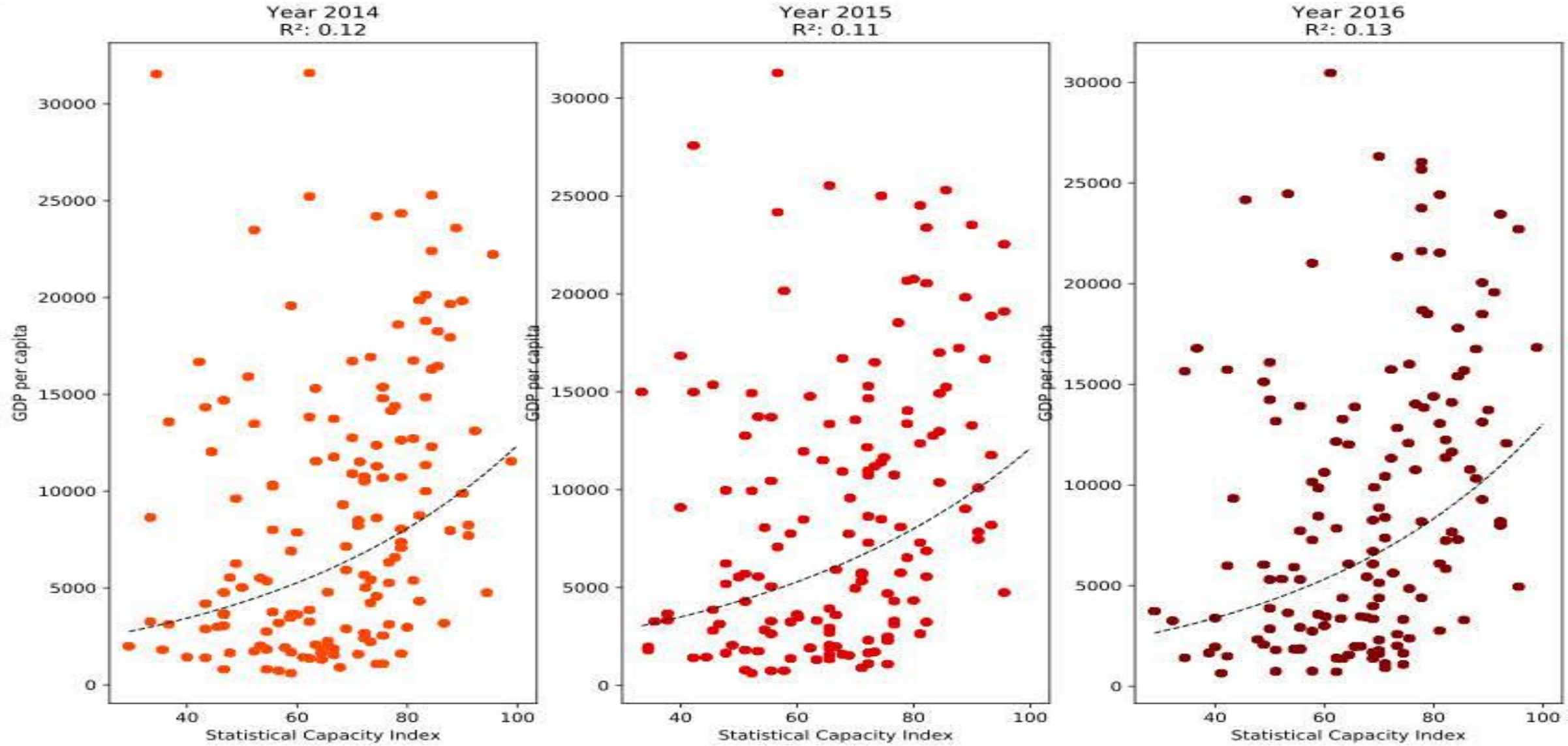
Particularly is there a gap in theory and empirical studies on the line of causality from 'data' to 'decisions'"

Morten Jerven, 2015

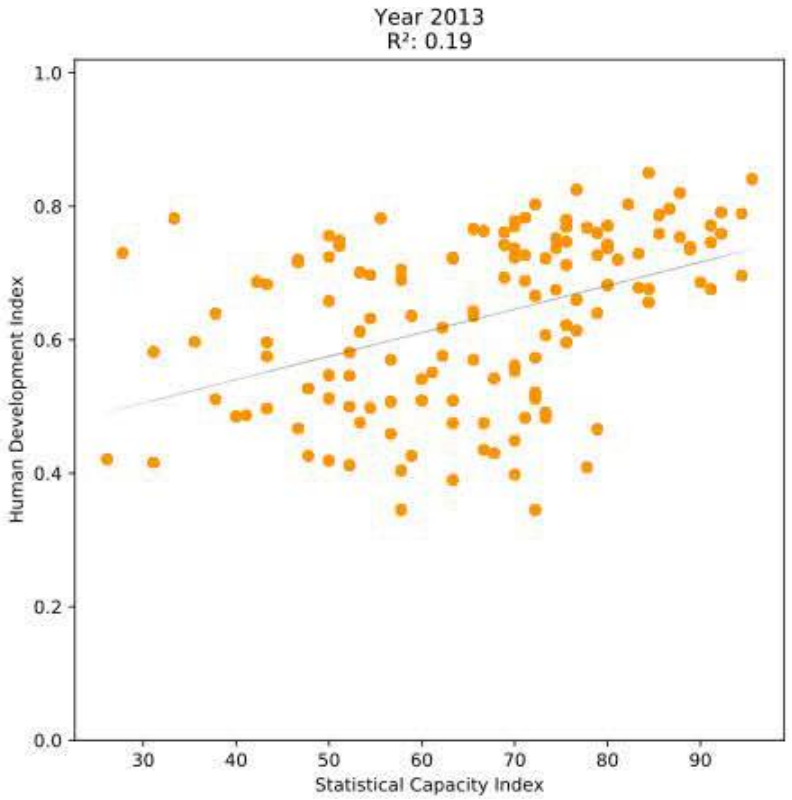
What does the evidence suggest?

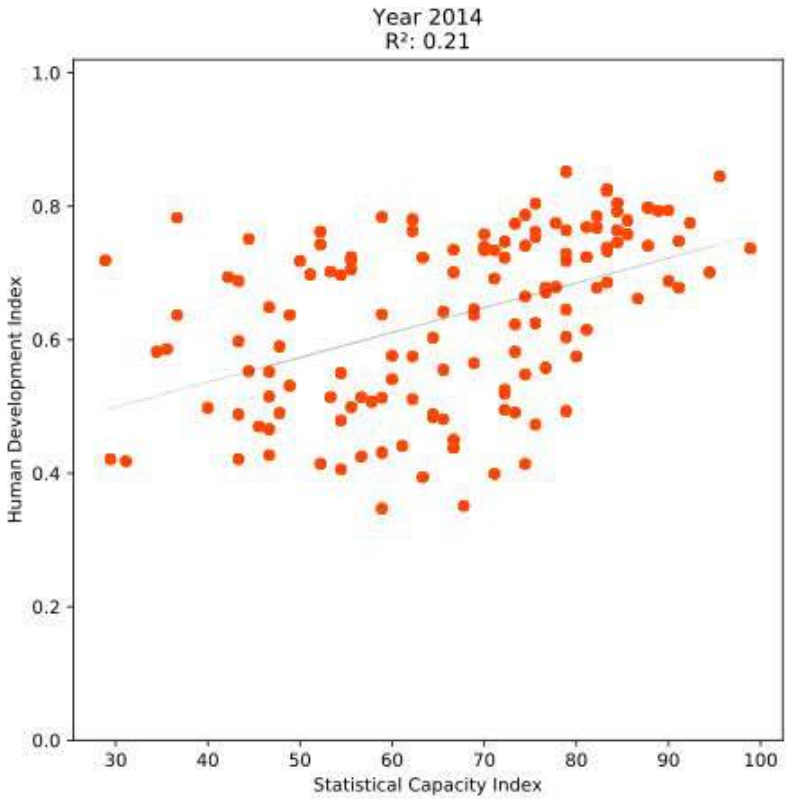
Why?

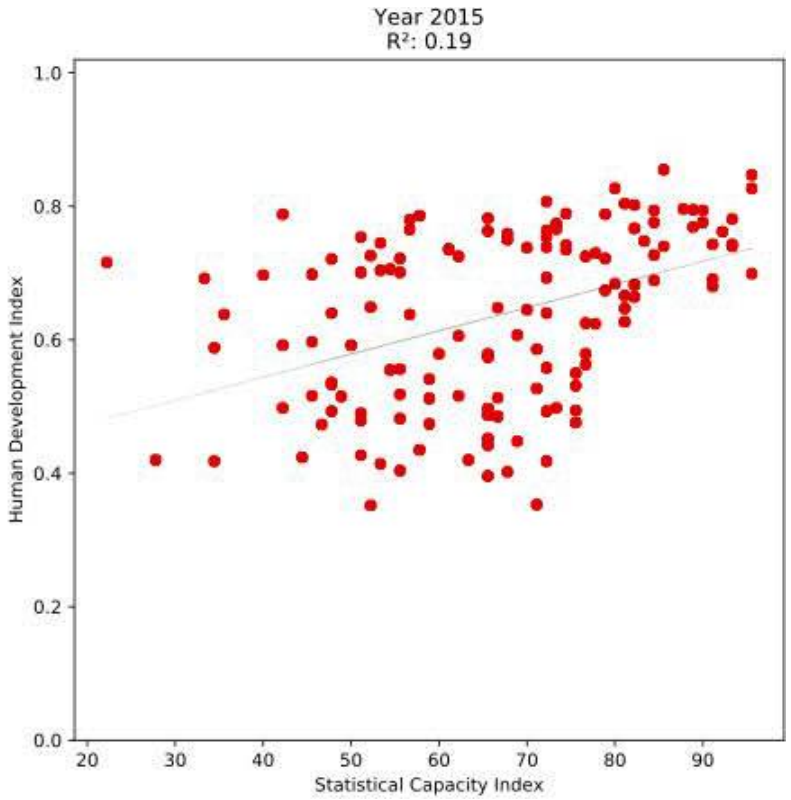
Development vs. statistical capacity: a rather weak link



Development vs. statistical capacity: a rather weak link

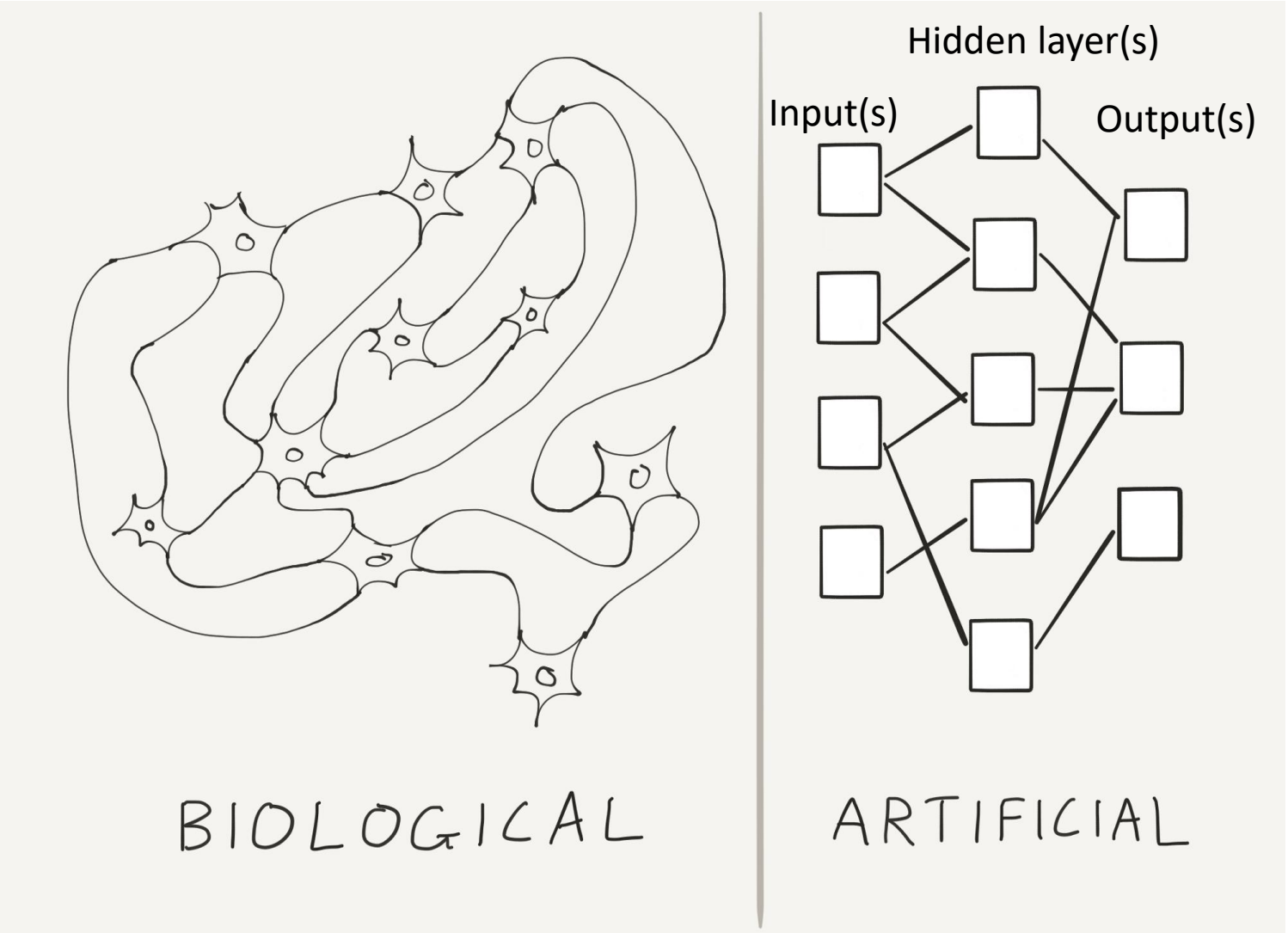






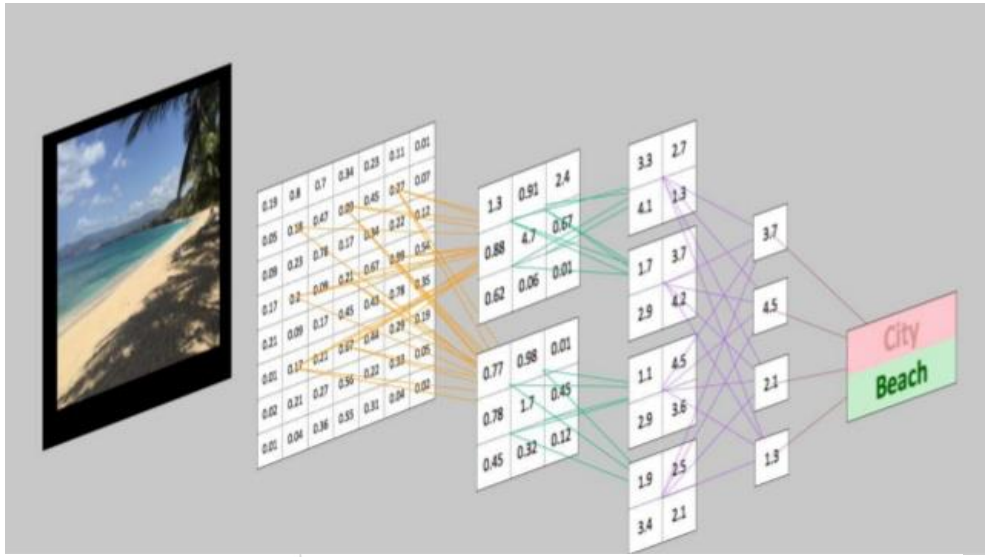
So, what do we do?

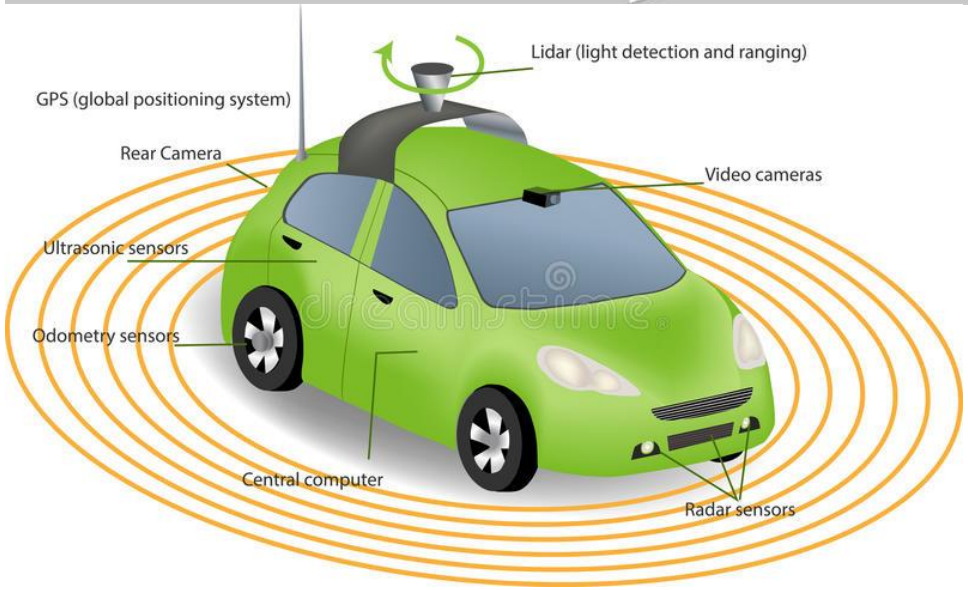
The (re)rise of AI.



Artificial intelligence—broadly-- is the **simulation of human intelligence processes by computer systems, especially artificial neural networks (ANNs)** inspired by the biological neural networks that constitute animal brains, which can "learn" (i.e. progressively improve performance on) through iterations and feedback. **Basically it's algorithms that learn to automate parts or all of tasks, and the machines they power.** (It's also what has not been invented yet)

The basics of AI is learning through *many* feedbacks

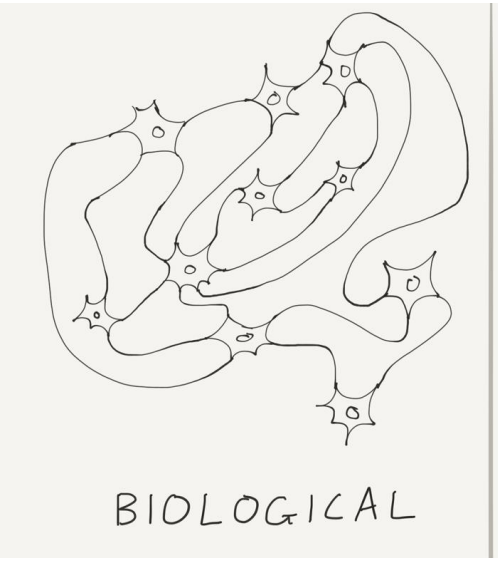


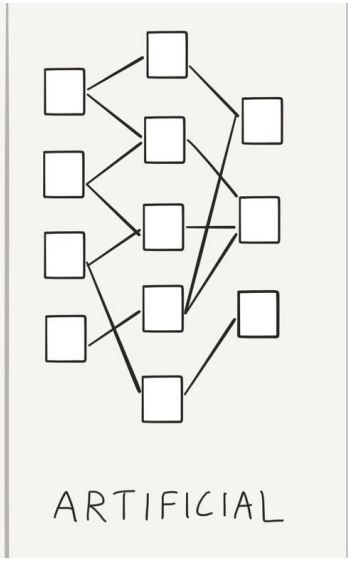


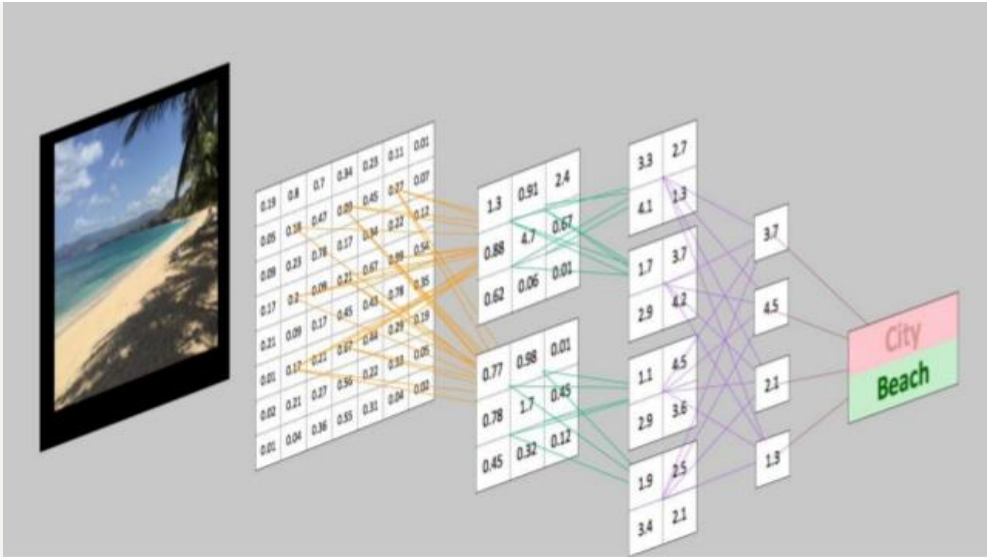
1. Try to guess / recognize. Right or Wrong?
2. Correct: +1. Reward!
3. Incorrect: -1. Penalty.
4. Repeat and learn through a feedback loop.

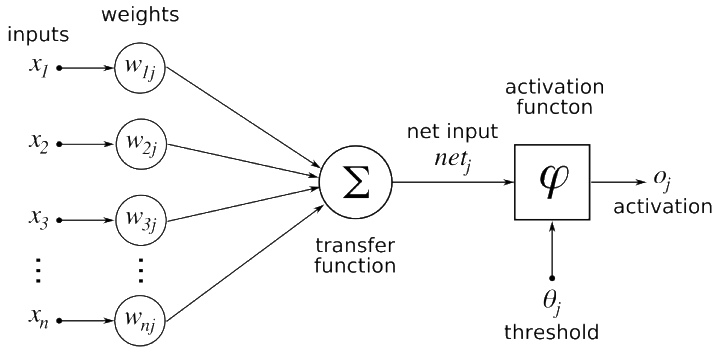
➔ **(The) machine (is) learning!**

From Big Data to AI: what can we learn?









…it's neither new nor black magic…

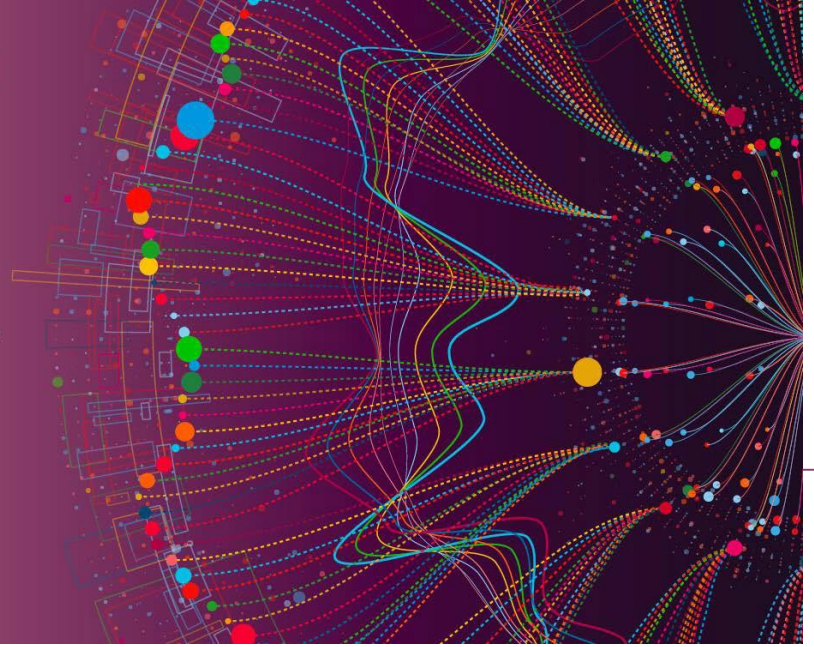
1. It is **at least 60+ years old**.
2. It still generalizes poorly. It has no sense of context. **It is still pretty stupid.**
3. We are **far from general AI**.
4. **Humans are still in control** (for better or worse).

…but…

1. The **(good) magic / core of the current AI is the credit assignment function to encourage and reinforce neurons / functions that help** the most achieve the goal (and reverse if not).
2. The key **difference and is data. Big Data.**

ITU Journal
ICT Discoveries

ISSUE NO.2
Data for Good



ITU Journal: *ICT Discoveries*, Special Issue No. 2, 6 Dec. 2018

TOWARDS A HUMAN ARTICIAL INTELLIGENCE FOR HUMAN DEVELOPMENT

Emmanuel Letouzé[1], Alex Pentland[2]
[1]Data-Pop Alliance, MIT Media Lab, and OPAL, [2]MIT and Data-Pop Alliance, and OPAL

Abstract *– This paper discusses the possibility of applying the key principles and tools of current artificial intelligence (AI) to design future human systems in ways that could make them more efficient, fair, responsive, and inclusive.*

Keywords – Artificial intelligence, big data, human development, open algorithms, fourth industrial revolution

A positive vision: Towards “Human AI” ecologies

MIT Prof Alex ‘Sandy’ Pentland:

“The big question that I'm asking myself these days is ***how can we make a human artificial intelligence?*** *(…) I don't want to think small—people talk about robots and stuff—I want this to be global. (…)*

What would happen if you had ***a network of people where you could reinforce the ones that were helping*** *and maybe discourage the ones that weren't?* ***That begins to sound like a society*** *or a company”.*

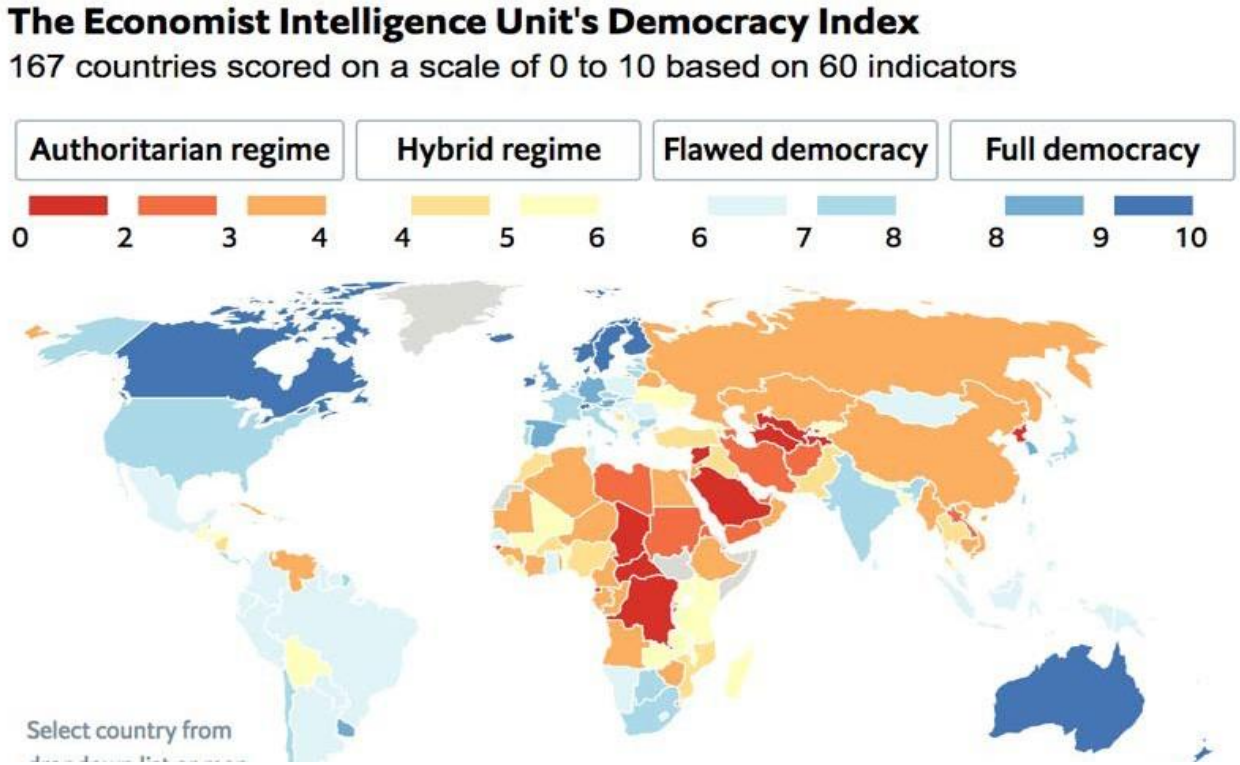
The Human Strategy. *www.thehumanstrategy.mit.edu*

mit media lab

Main challenges to a Human AI

1. Powerful **agents have an incentive for this not to work** (e.g. economic and political elites benefit from status quo).
2. Most **societies / countries currently lack appropriate data connections, capacities, and culture** for this.
3. There is **widespread digital and analog distrust, disdain, echo chambers, alternative facts narratives,** hampering cooperation, consensus, compromise.

It is very hard for facts and measures to "matter"

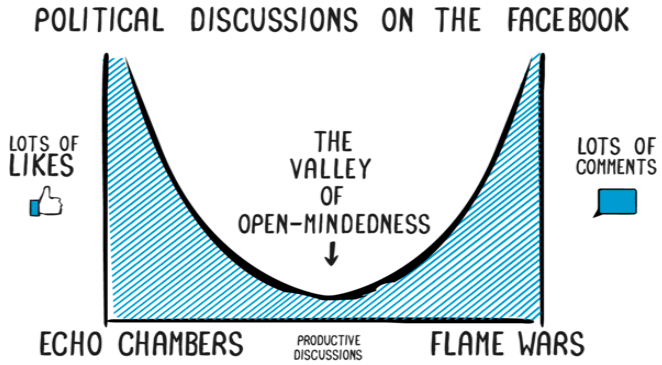


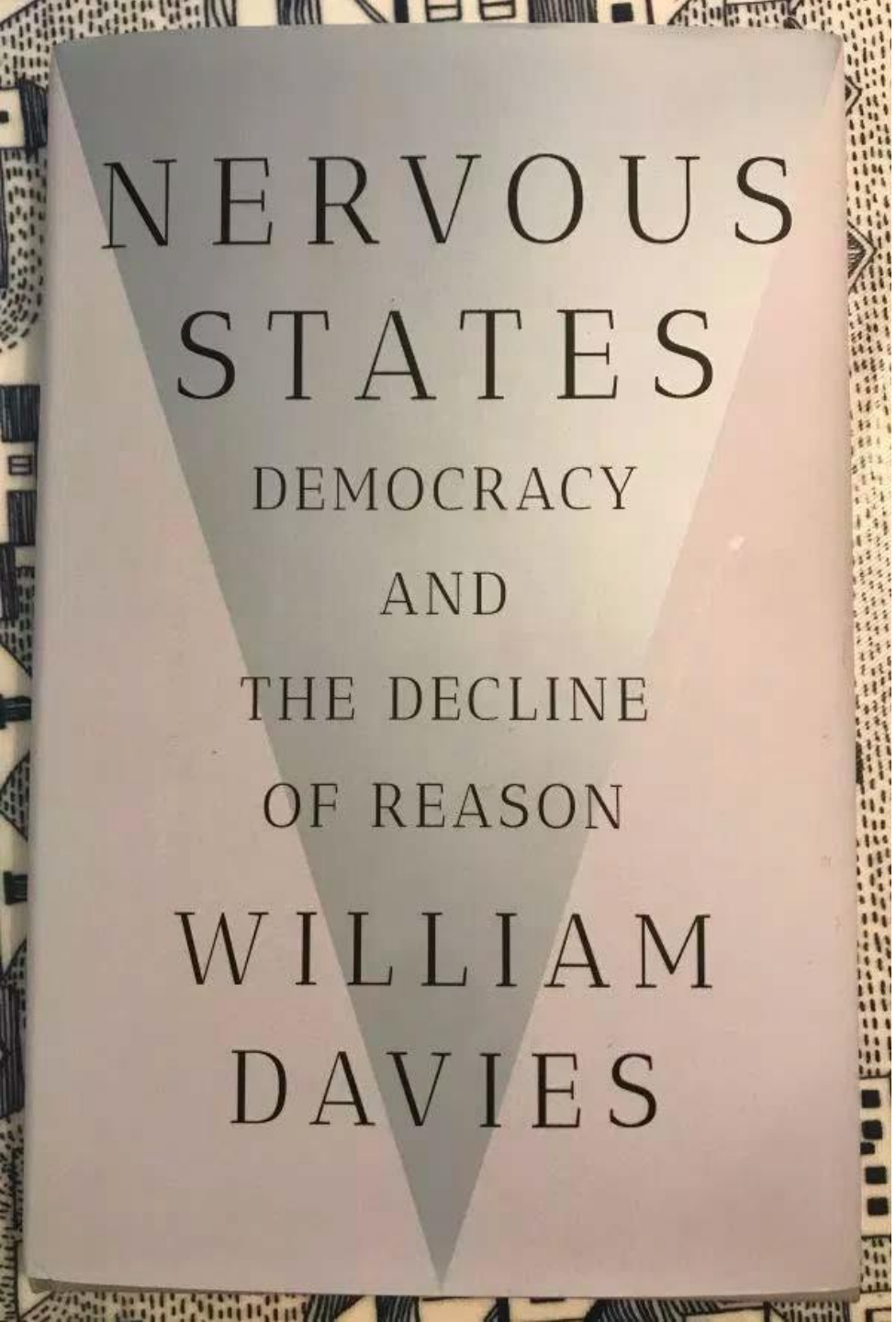

THE NEW YORKER

WHY FACTS DON'T CHANGE OUR MINDS

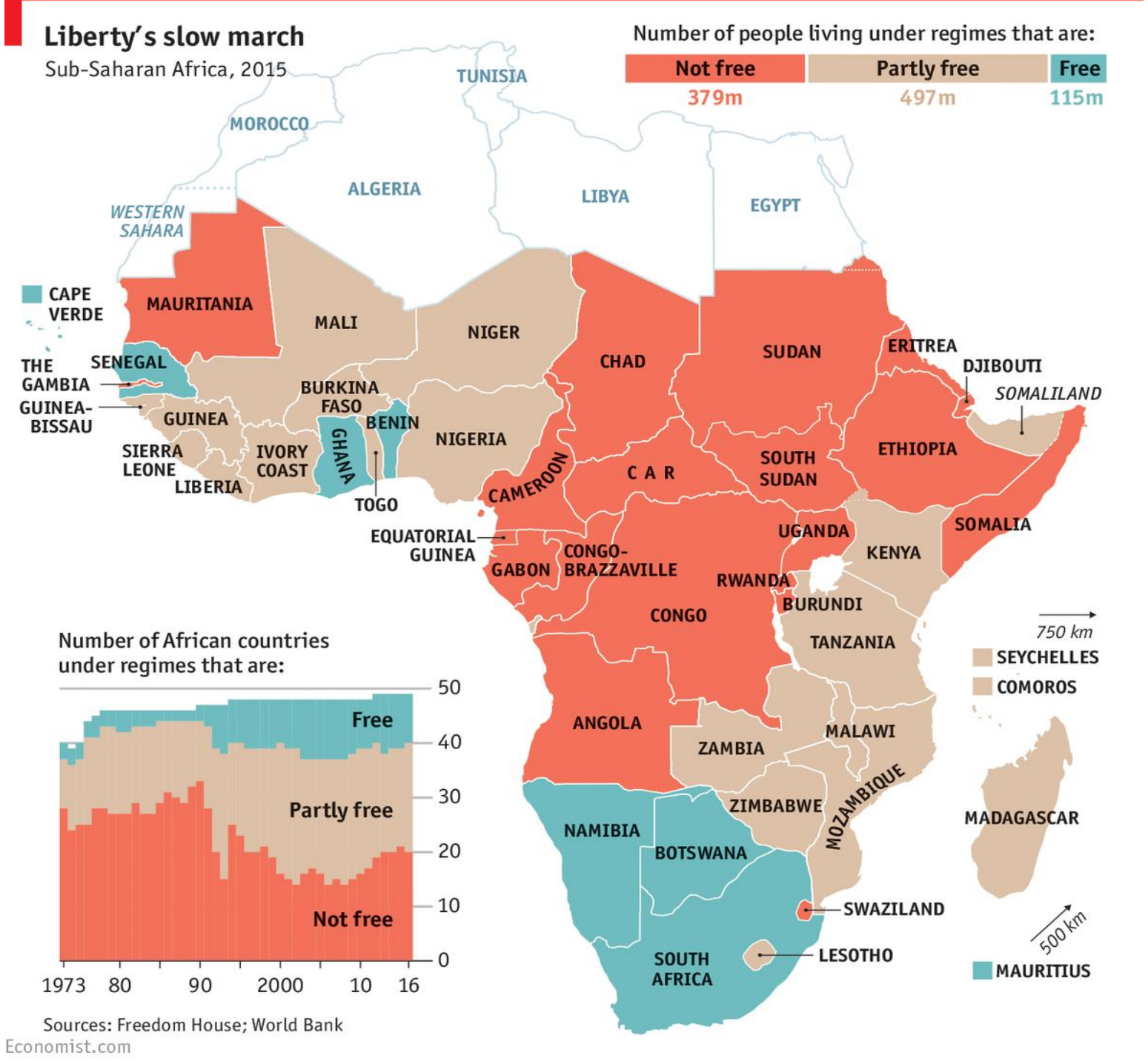
New discoveries about the human mind show the limitations of reason.

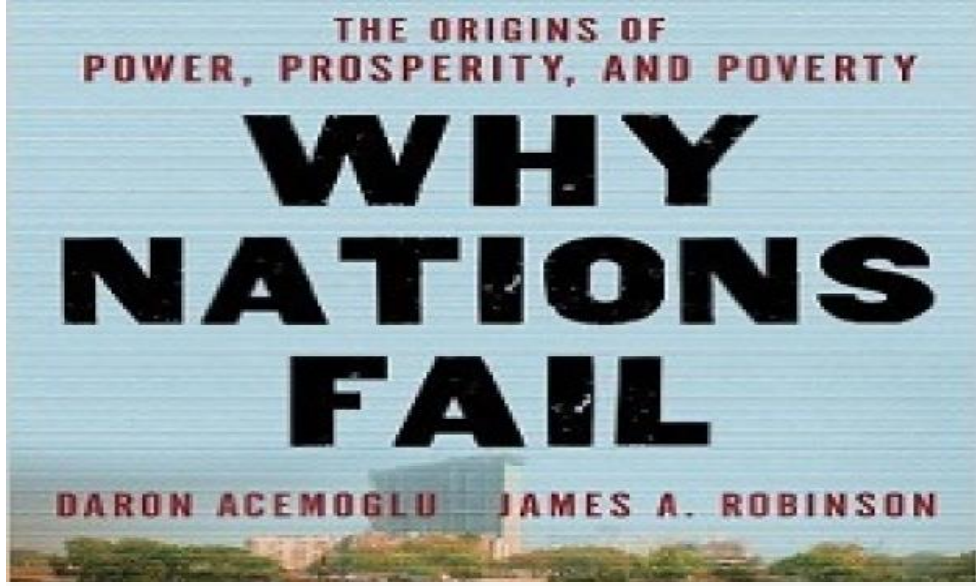
By Elizabeth Kolbert





"In this age of intense political conflict, we sense objective fact is growing less important. Experts are attacked as partisan, **statistics and scientific findings are described as propaganda,** and public debate devolves into personal assault. How did we get there and what can we do about it?"





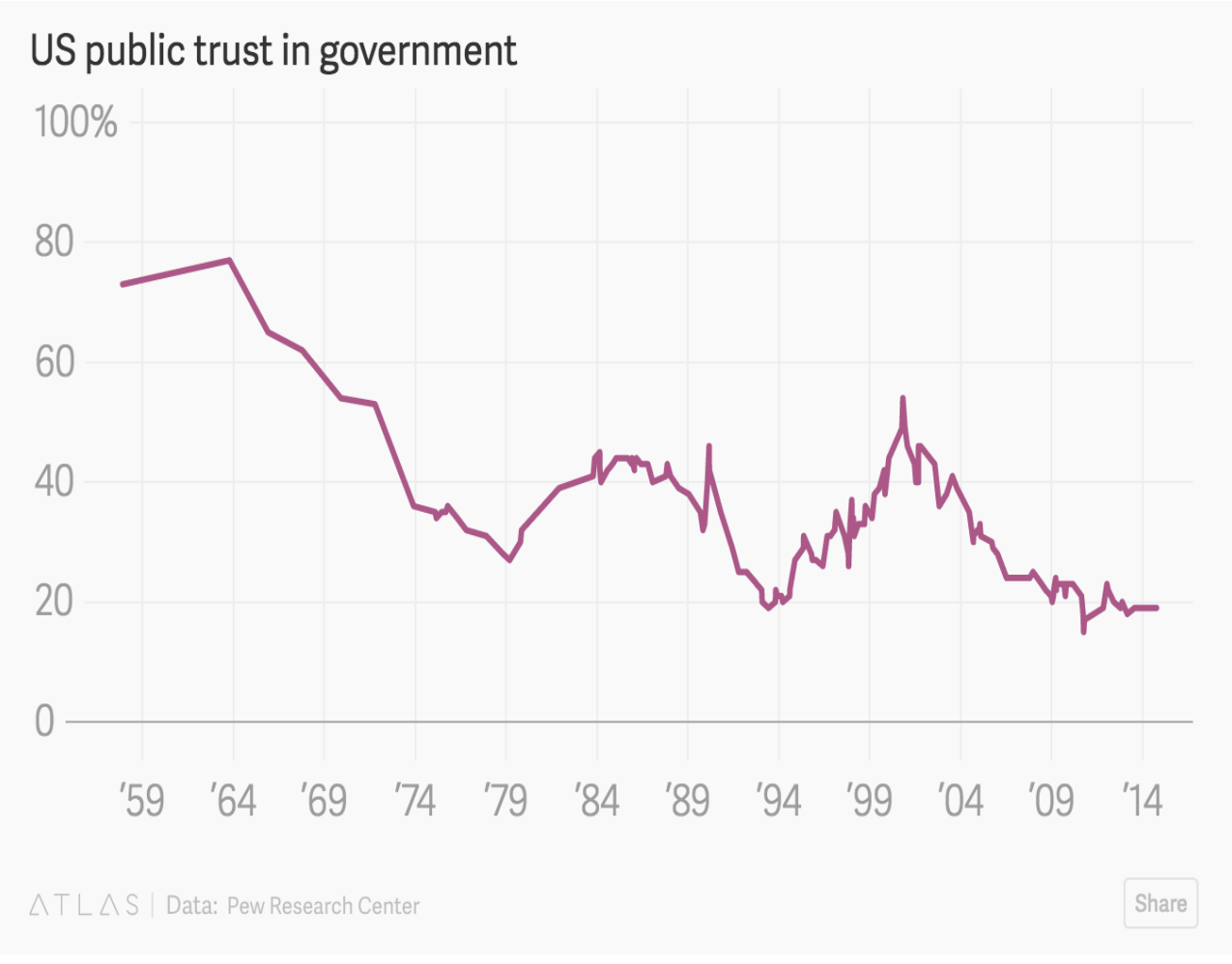
Norway topped the ranking and North Korea came last.

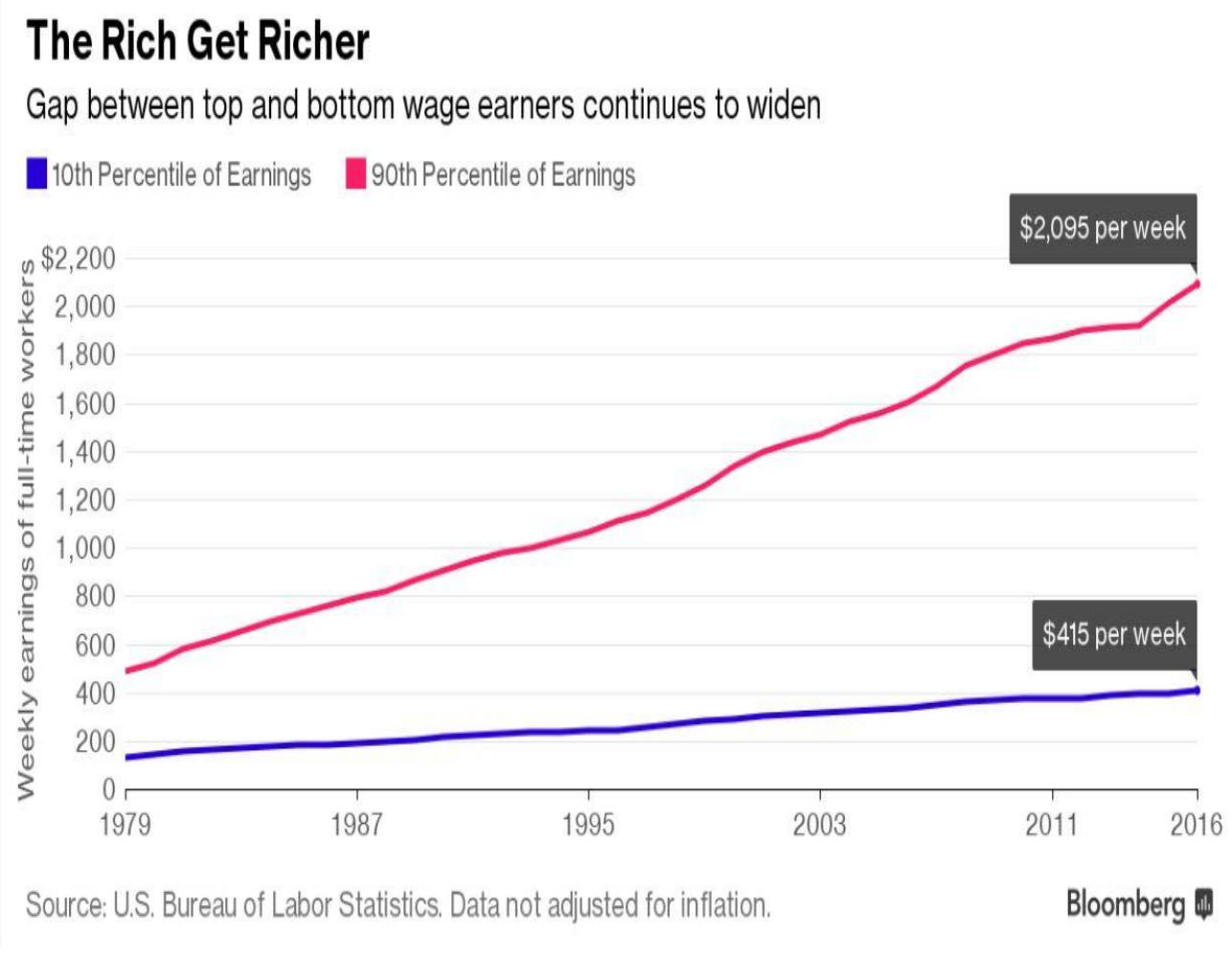
Top 10	Bottom 10
1. Norway	158. Uzbekistan
2. Iceland	T-159. DR Congo
3. Sweden	T-159. Saudi Arabia
4. New Zealand	161. Tajikistan
5. Denmark	162. Turkmenistan
T-6. Canada	163. Equatorial Guinea
T-6. Ireland	164. Central African Rep.
8. Switzerland	165. Chad
9. Finland	166. Syria
10. Australia	167. North Korea

"Democracy is in trouble in the West, in the mature democracies of western Europe and the US, which are no longer obvious beacons for those striving for democracy in the nondemocratic world," the EIU said.

IMPERFECT UNION

The US has been downgraded to a "flawed democracy," but not just because of Trump





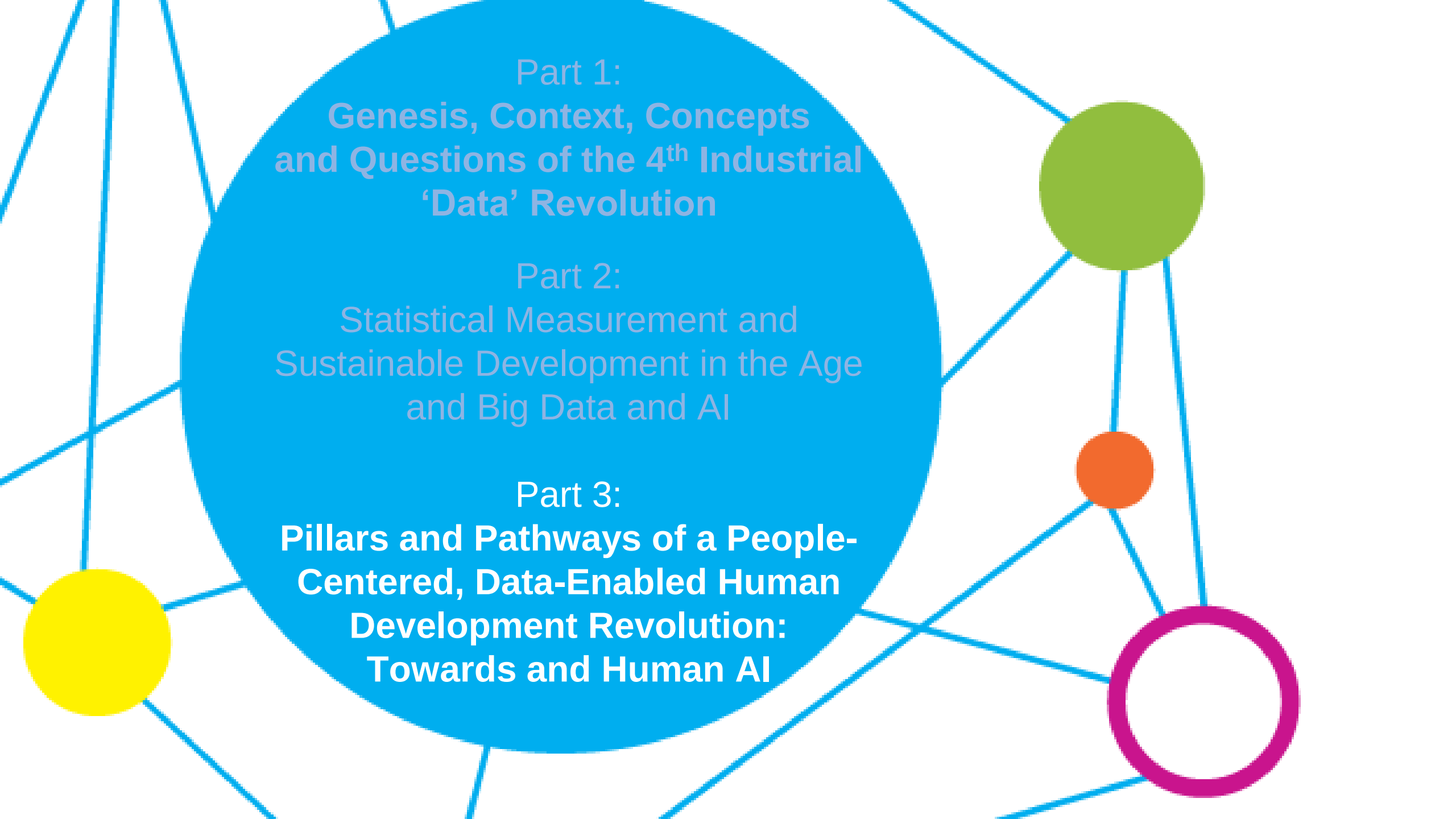
Data, Statistics, Measurement, Development, and Democracy

(2010)

Official statistics' two main functions:

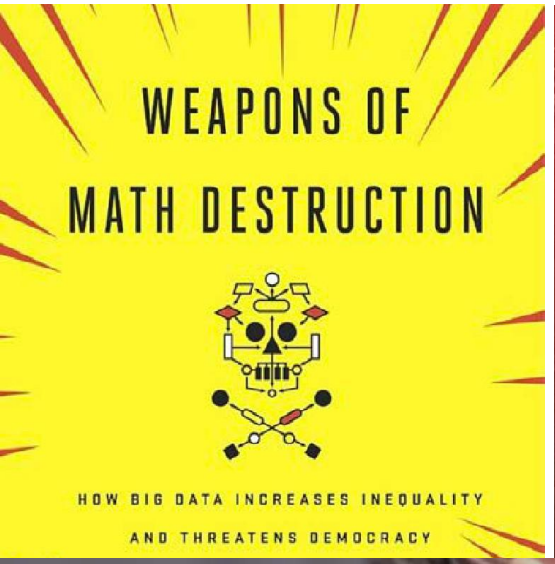
1) **provide society with "knowledge of itself**, on which to base its own choices and evaluate the effects of political decisions.".

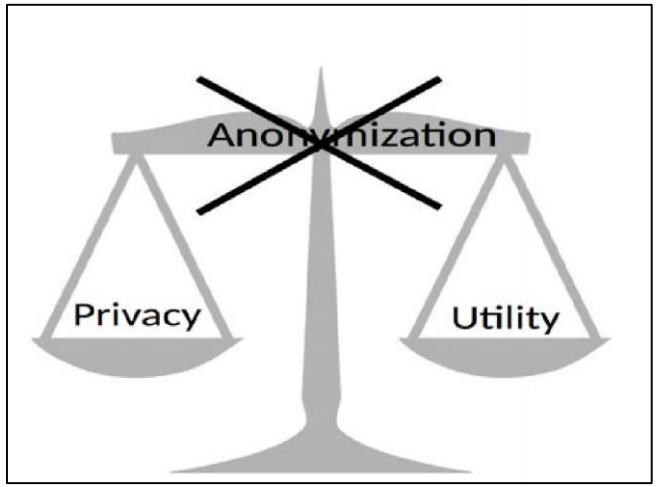
2) The second function of official statistics is **provides a deliberative space** where what is worth measuring, how it is measured, and for which purpose it is measured is freely and openly debated—to act as "a debated public institution".

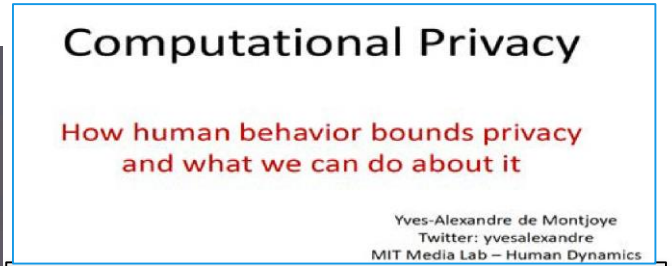

Part 1:
Genesis, Context, Concepts and Questions of the 4th Industrial 'Data' Revolution
Part 2:
Statistical Measurement and Sustainable Development in the Age and Big Data and AI
Part 3:
Pillars and Pathways of a People-Centered, Data-Enabled Human Development Revolution: Towards and Human AI

There *are* reasons to be concerned…

Data centers CO_2 emissions > entire airline industry







But we can’t give up on (data) science and technology

By Alex "Sandy" Pentland

Saving Big Data from Itself

Saving Big Data from Big Mouths

Those who would condemn big data ought to try making something

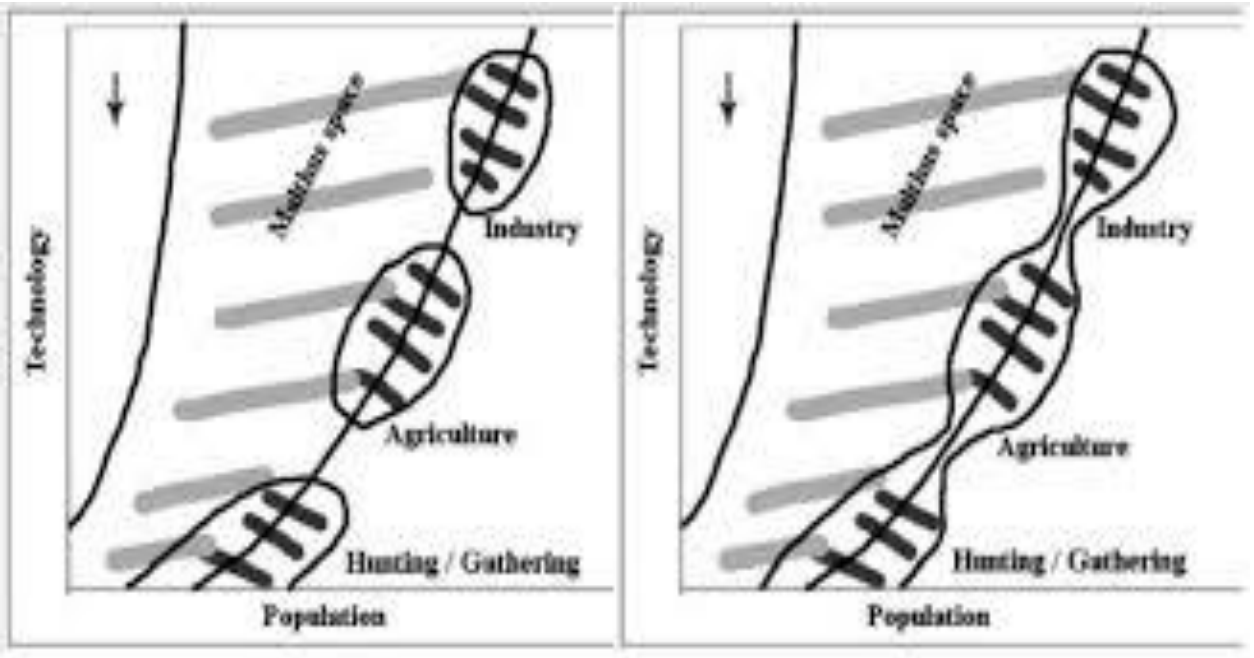
By Cesar A. Hidalgo | April 29, 2014

Journal of Economic Perspectives—Volume 17, Number 4—Fall 2003—Pages 167–190

The Demographic Transition: Three Centuries of Fundamental Change

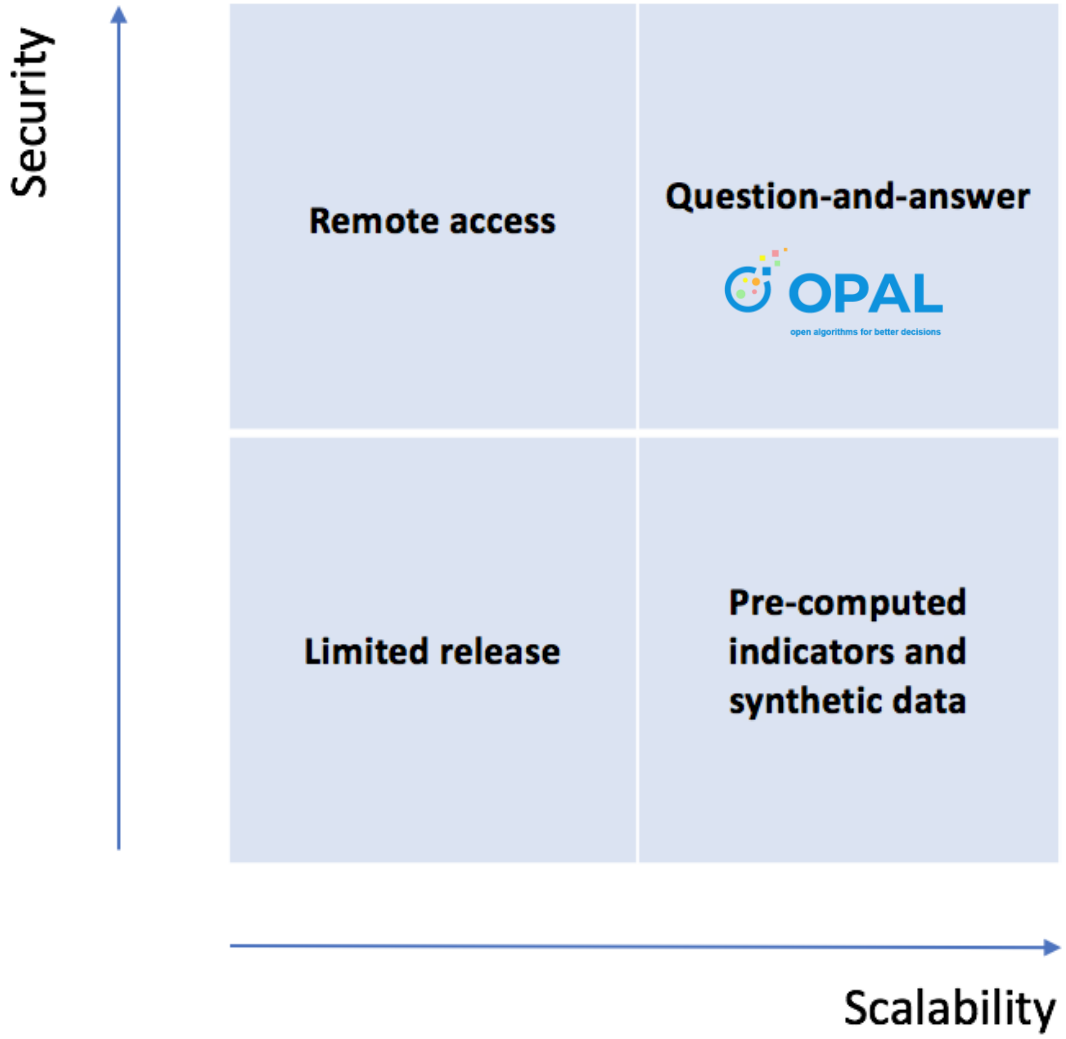
Ronald Lee

Before the start of the demographic transition, life was short, births were many, growth was slow and the population was young.



Ronald D. Lee: “Malthus and Boserup: Adynamic synthesis (1984)

How to ‘open’ private sector data safely, ethically, at scale?



On the privacy-conscientious use of mobile phone data

Yves-Alexandre de Montjoye ✉, Sébastien Gambs, Vincent Blondel, Geoffrey Canright, Nicolas de Cordes, Sébastien Deletaille, Kenth Engø-Monsen, Manuel Garcia-Herranz, Jake Kendall, Cameron Kerry, Gautier Krings, Emmanuel Letouzé, Miguel Luengo-Oroz, Nuria Oliver, Luc Rocher, Alex Rutherford, Zbigniew Smoreda, Jessica Steele, Erik Wetter, Alex “Sandy” Pentland & Linus Bengtsson

Scientific Data **5**, Article number: 180286 (2018) | Download Citation ↓

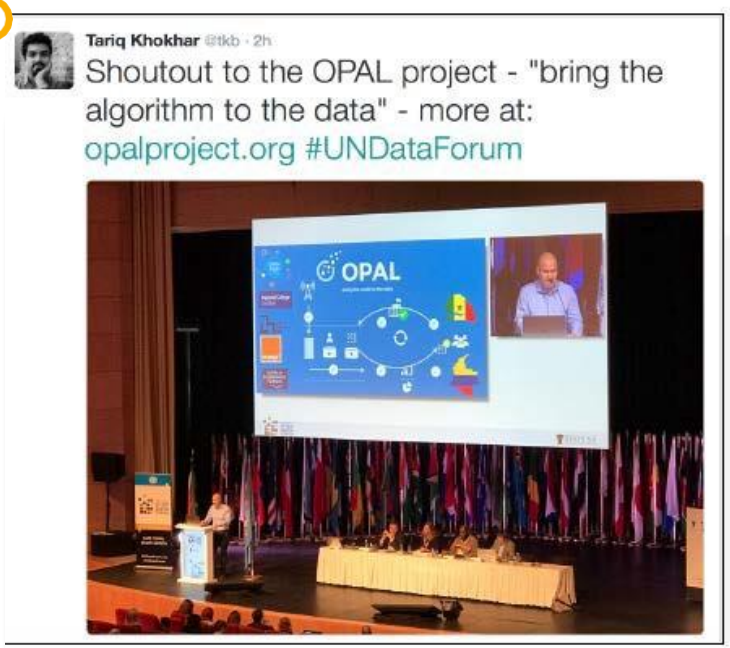
Les Echos

DÉCRYPTAGE

Nos données peuvent-elles servir l'intérêt général ?

PROSPECTIVE – De plus en plus de voix s'élèvent pour demander que les données collectées par les entreprises privées soient mises au service de la collectivité.

“Open Algorithms” (OPAL): a revolutionary vision to make facts and measurements matter, and data, algorithms and AI ‘work’ for the majority and the SDGS



The Open Algorithm project: Developing indicators, capacity and trust

To address the complex challenge of data access, Orange, MIT Media Lab, Data-Pop Alliance, Imperial College London and the World Economic Forum — supported by Agence Française de Développement and the World Bank — are developing a platform to unleash the power of “big data” held by private companies for public good in a privacy preserving, commercially sensible, stable, scalable and sustainable manner.

Open algorithms: A new paradigm for using private data for social good

By Thomas Roca, Emmanuel Letouzé | 18 July 2016

MONDE

Mettre le Big Data privé au service du bien public

BENOÎT GEORGES - LES ECHOS | LE 06/12/2016

Le projet Open Algorithm vise à utiliser les données d'entreprises privées pour des actions de développement.

Elisabeth MEDOU BA DANG,
Porte-parole et directrice Afrique,
Moyen-Orient, Orange
Rabat, 2 juillet 2018

Aujourd’hui, le projet OPAL est développé avec l’Agence Française de Développement, Telefonika et d’autres partenaires. Des tests sont en cours au Sénégal et en Colombie. Nous espérons pouvoir mettre en œuvre plusieurs usages d’ici la fin de l’année. Cette plateforme constitue un levier important pour industrialiser l’usage du big data au service du développement.

COLOMBIE
SÉNÉGAL 23 MAI 2018

PROJET OPAL : LE BIG DATA AU SERVICE DU DÉVELOPPEMENT

AFD
AGENCE FRANÇAISE DE DÉVELOPPEMENT

UN Big Data for Official Statistics Conference
Bogotá, Nov. 8 2017

OPAL: Setting Human AI data systems and standards for sharing and using private data safely at scale

1. Partner private companies (here a telecom operator) allow OPAL to access its servers through a secured platform. The **data never leave** the servers.

Global/Local/Crowd Open Algo check & certification

2. Certified open algorithms developed by developers are sent and run on the servers of partner private companies, behind their firewalls.

ALGO DEVELOPPERS

3. A governance system including a *Council for the Orientations of Development and Ethics* (CODE) ensures that the algorithms and use cases are ethically sound, context relevant, etc.; users benefit from **capacity building** activities

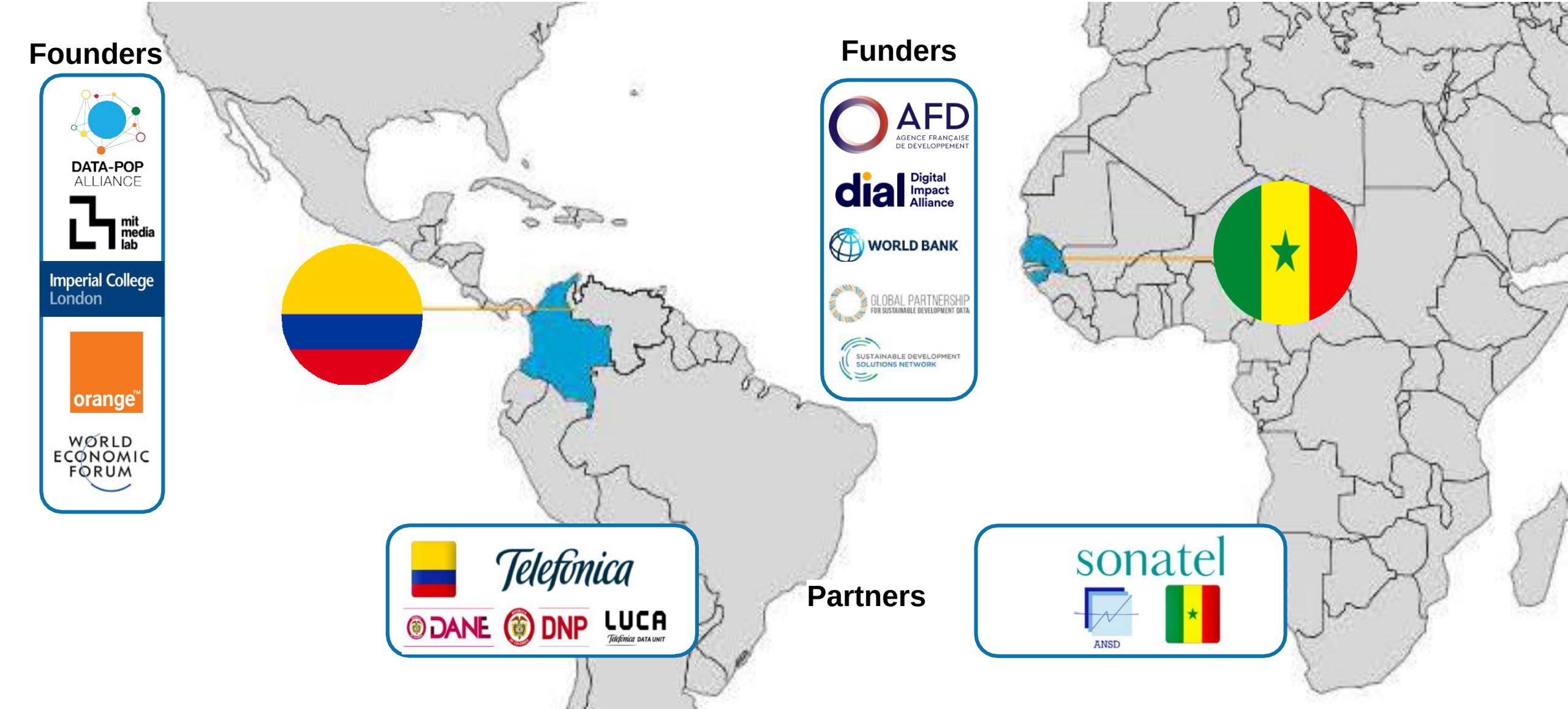
4. Key **indicators derived from private sector data such as population density, poverty levels, or mobility patterns, feed into use cases** in various public policy and economic domains. Data are safe, minimized, used (more) ethically.

Local C.O.D.E.

USERS

OPAL
open algorithms for better decisions

OPAL is a unique case of a Public-Private-People Partnership piloted in Colombia and Senegal



Founders

DATA-POP ALLIANCE
mit media lab
Imperial College London
orange
WORLD ECONOMIC FORUM

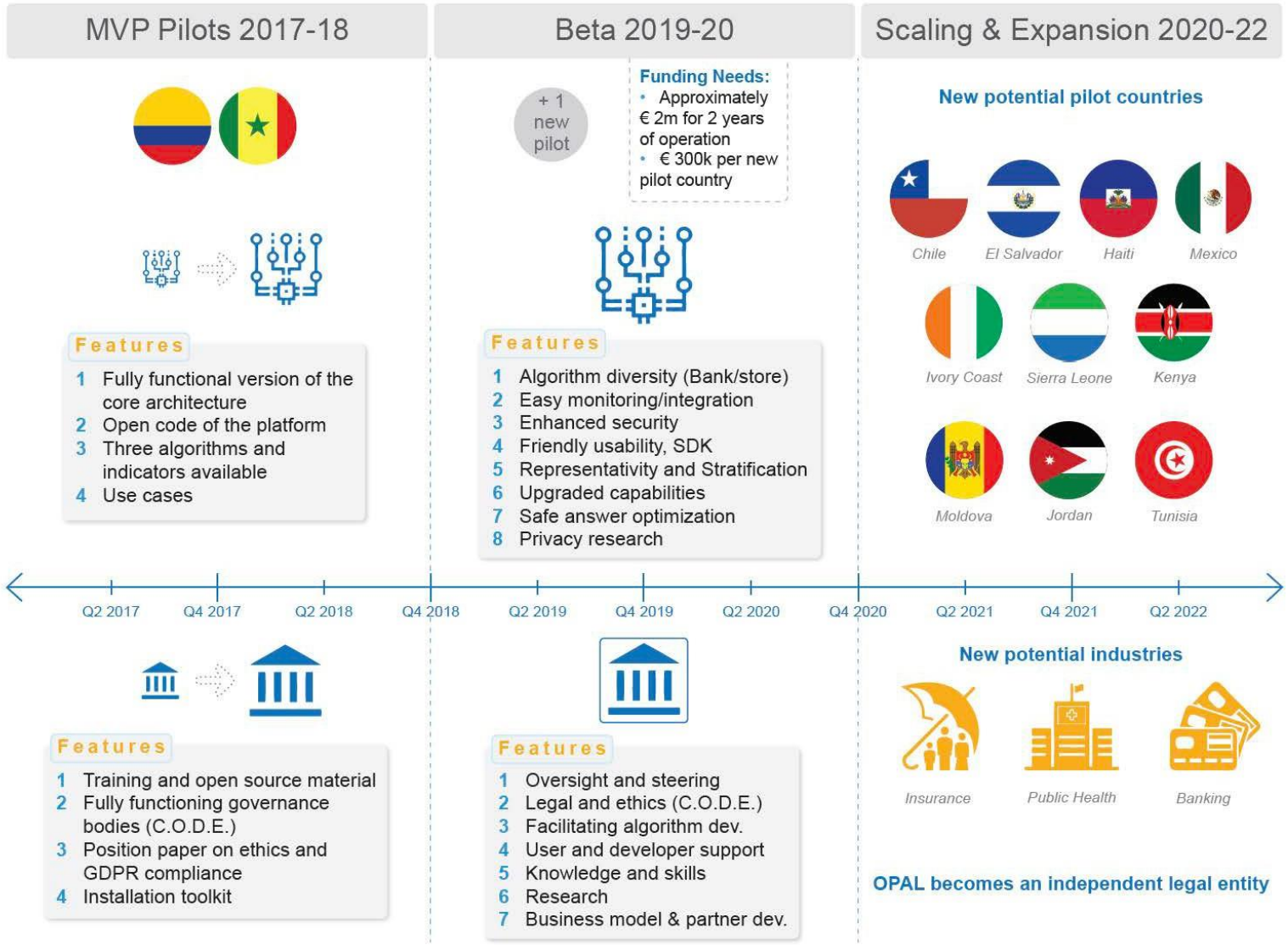
Funders

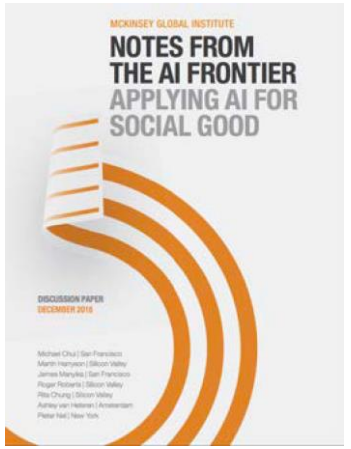
AFD AGENCE FRANÇAISE DE DÉVELOPPEMENT
dial Digital Impact Alliance
WORLD BANK
GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT DATA
SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK

Partners

Telefónica
DANE
DNP
LUCA Telefónica DATA UNIT
sonatel
ANSD

OPAL ambitions to radically change how data are shared and used to improve the state of the world





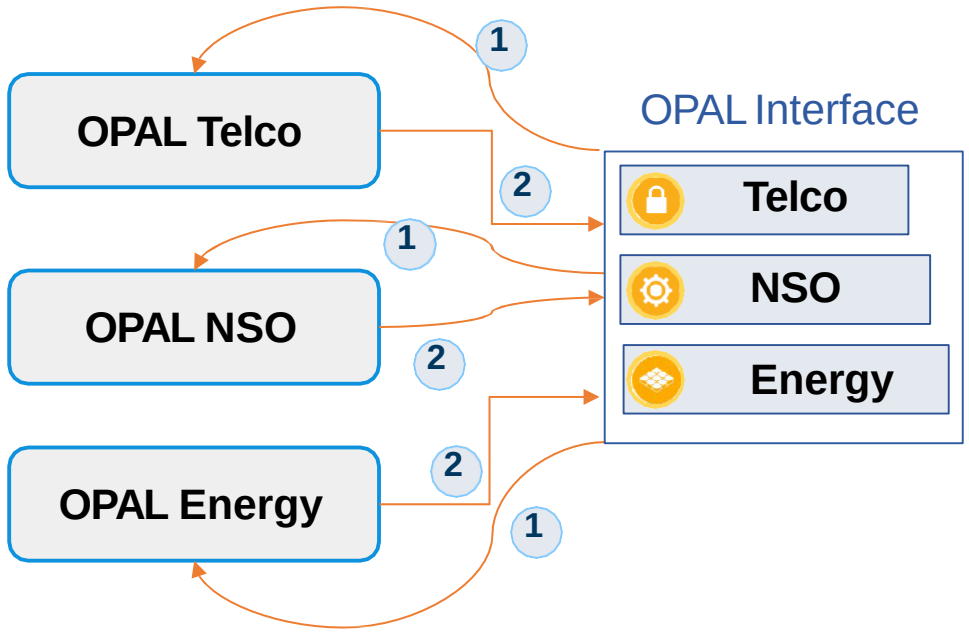
"Other data sharing initiatives with private companies are also being worked on, ***including OPAL (…), to derive aggregated insights from a company's data without data leaving the company's server.*** *If proven successful, this could be a powerful tool in unlocking private data for social causes."*

—McKinsey Global Institute *"Applying AI for Social Good"*, December 2018"

OPAL will aim to query multiple data sources

First step

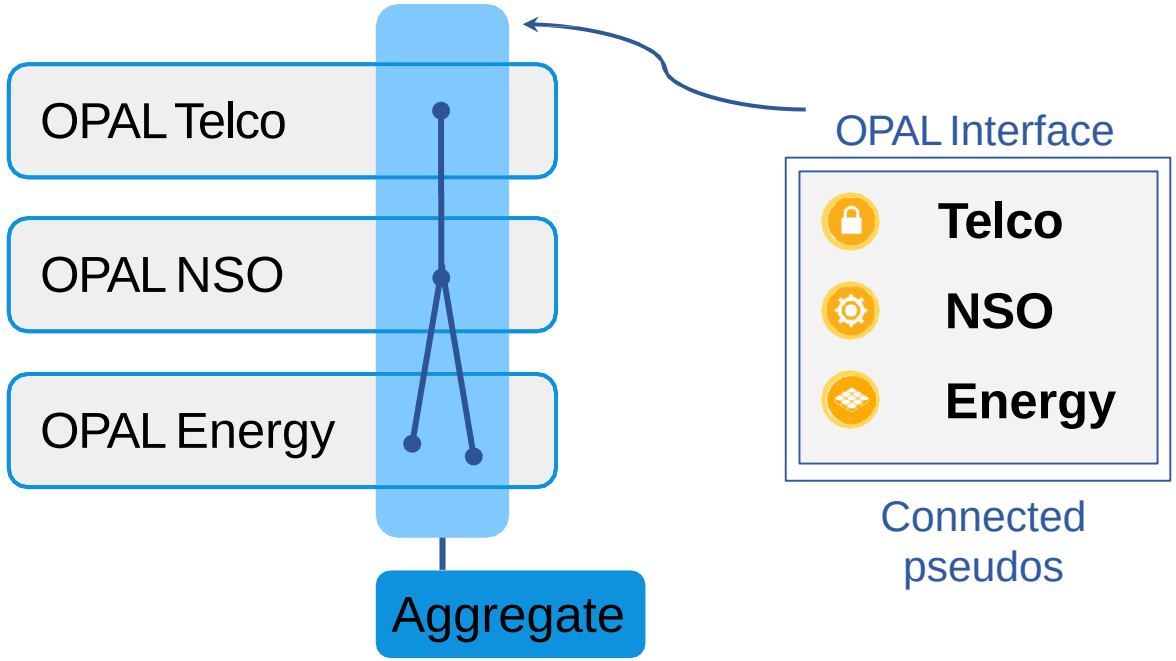
Level 1: Additive



1. Call algo on separate OPALs
2. Get individually aggregated results (current MIT OPAL demo)

OPAL's vision

Level 2: Integrative



1. Call level 2-algo that runs across OPALs
2. Aggregate combined results

Use cases in Senegal

Population Density
Calibration and use of population density algorithm (with Knuper)

Institut Pasteur
Analysis of Dengue

Essec-Accenture

Agriculture
Impact of road improvements on regional markets

Urbanism
Analysis of mobility flows

Migration and Stability
Migrations and tensions between communities

Health
Granularity and explanatory factors of contagious diseases

Poverty
Analysis of monetary poverty

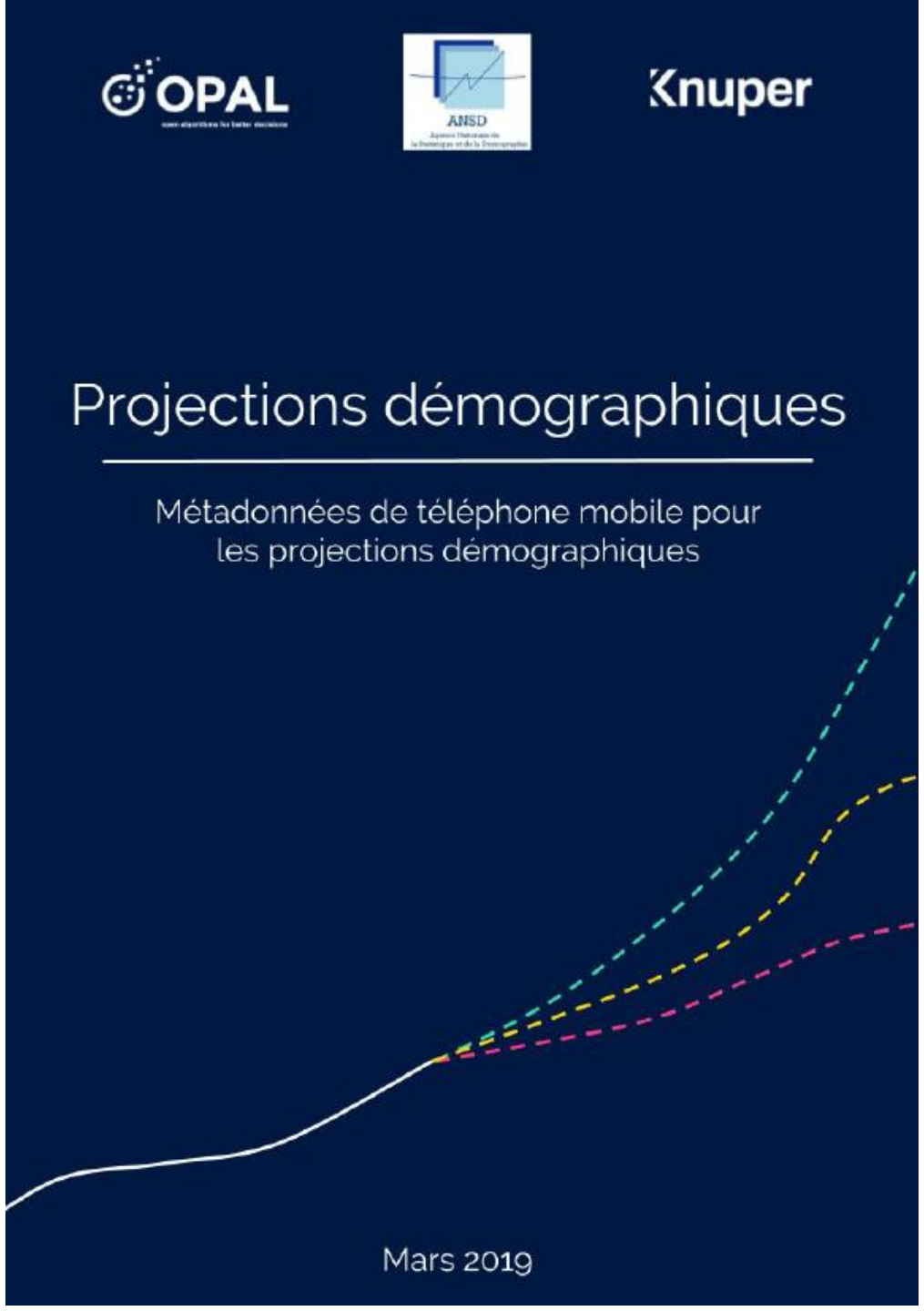
Agriculture
Analysis of travel time and distance to regional markets

Economy
Event detection

Agriculture
Data Visualization and simulation tool

Essec-Accenture

Use case #1 in Senegal



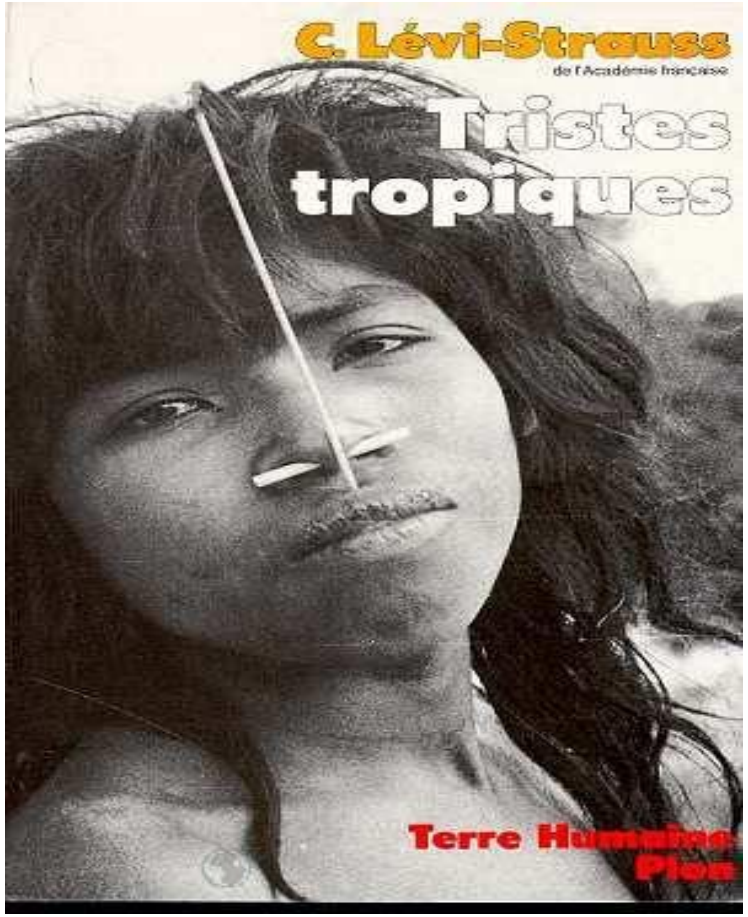
How to build “data literacy", connections, and “rational compassion” to make this work?

Building Literacy for the Data Generation

A unique opportunity exists to develop data literacy education for children born into a world shaped by big data.

MasterCard | MasterCard Center for Inclusive Growth

Think about the need for ‘data literacy’ and reconsider as literacy in the age of data



"***Writing is a strange thing***. *If my hypothesis is correct,* ***the primary function of writing, as a means of communication, is to facilitate the enslavement of other human beings***”.

If writing was not sufficient to spur knowledge, it may have been necessary to reaffirm domination structures. (…) ***The fight against illiteracy goes on par with an increase in the control of the Power over citizens***.”

Avoid this with data to **accelerate positive history**

Think about the need for ‘data literacy’ and reconsider as literacy in the age of data

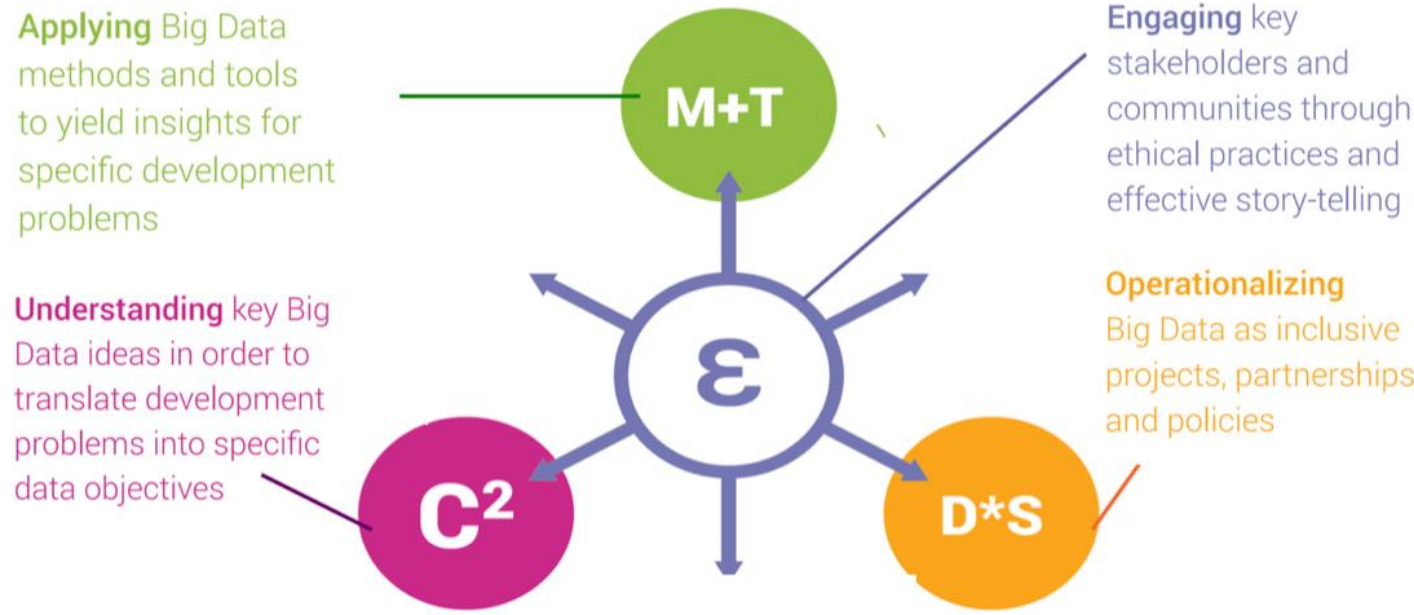
DATA-POP ALLIANCE
WHITE PAPER SERIES

Beyond Data Literacy:
Reinventing Community Engagement and Empowerment in the Age of Data

October 2015

*We define data literacy as the **“the desire and ability to constructively engage in society through or about data”**.*

Data-Pop Alliance’s building blocks” of data literacy



Building Literacy for the Data Generation

December 18, 2015

MasterCard | MasterCard Center for Inclusive Growth

A unique opportunity exists to develop data literacy education for children born into a world shaped by big data.

DATA-POP ALLIANCE

About | Our Work | Geographies | Resources | DataFeed | Learn More

Trainings Timeline

CAMBRIDGE, MA
June 2016

BOGOTÁ, COLOMBIA
December 2016
Learn more

SANTIAGO DE CHILE, CHILE
March 2017

NAIROBI, KENYA
June 2017
Learn more

SÃO PAULO, BRASIL
September 2017
Learn more

MEXICO CITY, MEXICO
October 2017
Learn more

DAKAR, SENEGAL
March 2018

BANGKOK, THAILAND
March 2018

CAMBRIDGE, MA (MIT)
October 2018
Learn more

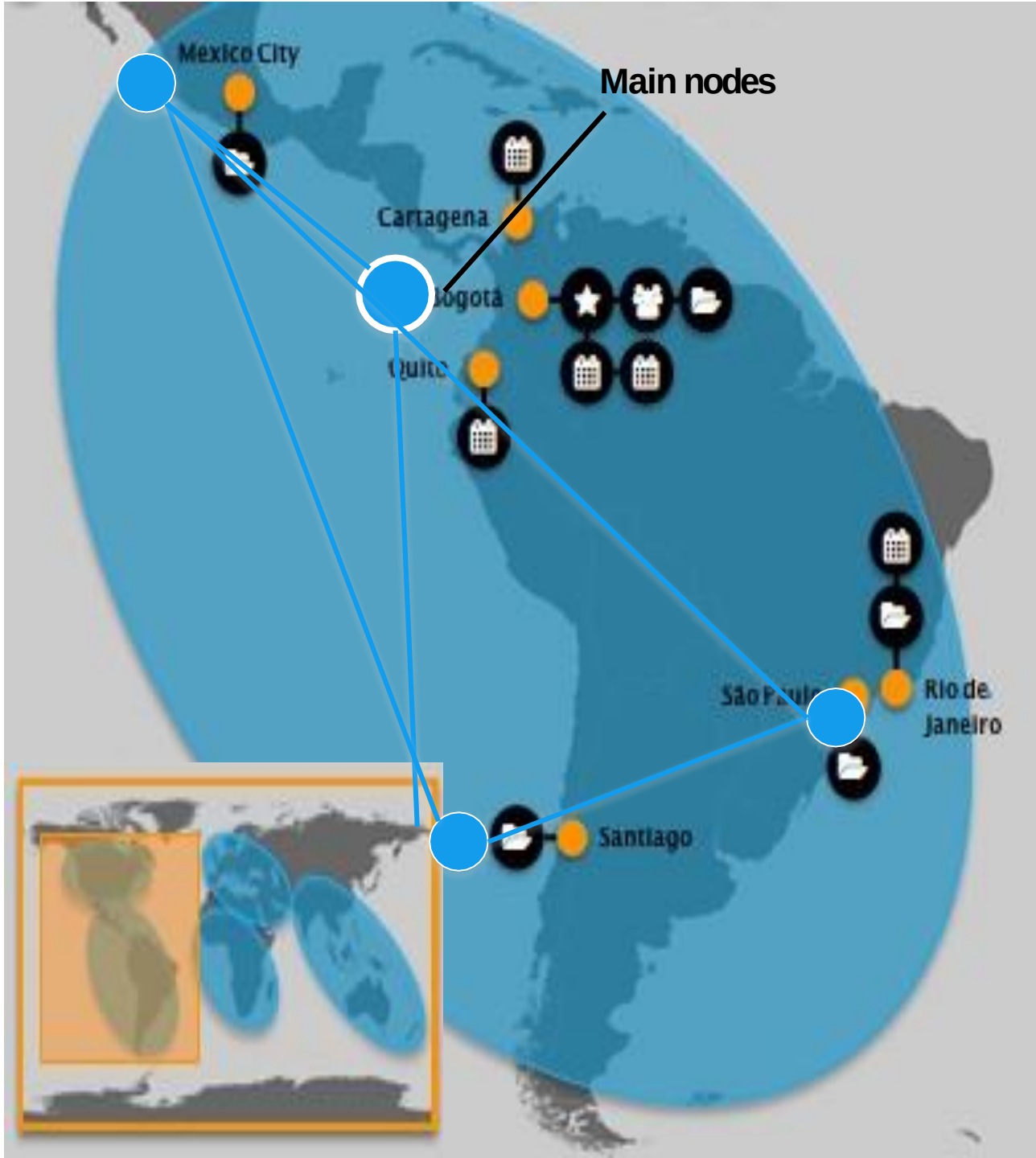
SANTO DOMINGO, DOMINICAN REPUBLIC
April 2019
Learn more

TUNIS, TUNISIA
April 2019
Learn more

BOGOTÁ, COLOMBIA
May 2019

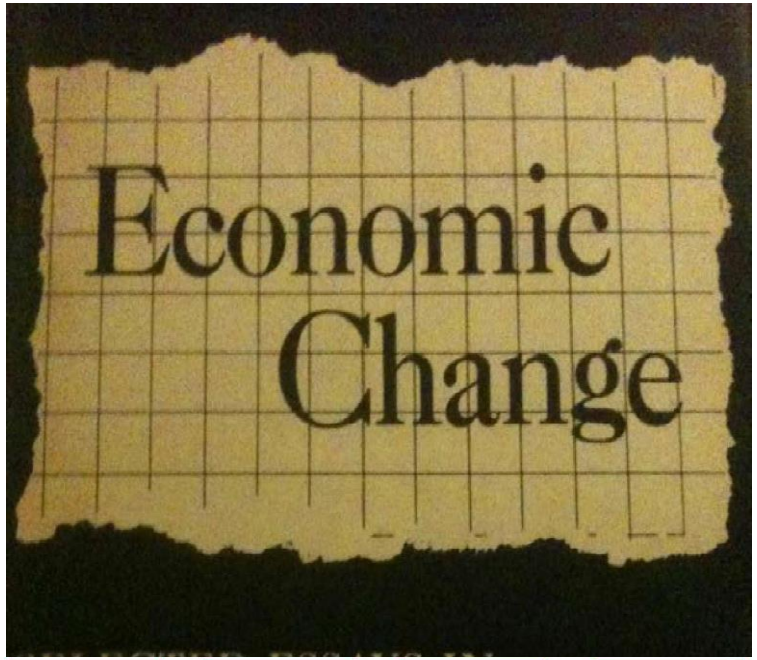
Data-Pop work and model (here example of LAC):

Locally co-design and deploy regional research, training, and strategy programs and partnerships to leverage Big Data and AI for sustainable human development (including outside of LAC in Botswana,Togo,Turkey, Moldova, Turkey, Tunisia…)



Why do we measure things? Does it *matter?* Why or why not? How can it matter more?

Measurement only matters when people care. Measurement is meant to signal and strengthen care about what gets measures; to turn codes into norms. Typically, in simple systems measurement becomes unnecessary once people care about what is measured. In complex system like human societies, the language, appetite for, skills and culture of measurement used and promoted wisely and with "rational compassion", remains a very powerful tool to instill change.



Thank you

eletouze@datapopalliance.org
@opalproject.org
@mit.edu